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EXPERT REVIEW SUPPLEMENT

NEXT STEPS IN ALZHEIMER'S DISEASE:

IMPROVEMENTS IN DIAGNOSIS AND TREATMENT

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CME 1.5

ABSTRACT

As understanding of the etiology and progression of Alzheimer's disease (AD), which affects >5 million people in the United States alone, has progressed, researchers have made advancements in the ability to influence disease progression and develop treatments that provide improvements in patient quality of life. Two variants of AD exist: a more prevalent sporadic form and a hereditary form, the latter of which has contributed to much of the understanding of the genetic development of this disorder. Similarly, clinical knowledge of AD has increased, with researchers identifying a clinical state of mild cognitive impairment (MCI) as being a precursor to AD in many affected patients. This understanding has allowed researchers to construct new methods for determining if a patient has AD as early as possible. Future therapies for AD, particularly those with the potential to modify the course of the disease, are likely to be most beneficial in patients who are diagnosed at an early stage. However, as there is a lack of universal agreement of the definition of MCI, researchers have also sought to use other possible indicators, including the presence of episodic memory deficits, structural neuroimaging, cerebrospinal fluid biochemical markers, and genetic mutations, to determine if a patient has AD. Along with early diagnosis, researchers are investigating various treatment strategies to deter mental deterioration caused by AD. The next generation of treatments for AD will aim to alter the neurobiological substrates of the disorder. Some of these treatments will target alterations in neural function caused by AD, while other options seek to rescue neurons from cell death and restore function at a cellular level.

In this expert review supplement, Howard H. Feldman, MD, FRCPC, and Nagaendran Kandiah, MBBS, discuss the current understanding of MCI and its association with AD. Steven T. DeKosky, MD, reviews recent research that examines the utility of potential biomarkers in the early diagnosis of AD. Lastly, Stephen Salloway, MD, MS, reviews AD treatment strategies currently in development.

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Statement of Need

Alzheimer's disease is the most prevalent neurological disorder, afflicting >4.5 million people in the United States alone, according to the Alzheimer's Disease Fact Sheet available at www.alz.org. As the number of elderly people steadily increases, the prevalence of Alzheimer's disease is expected to at least triple by the year 2050, making it one of the nation's most overwhelming and concerning health crises. In order to relieve the personal, economic, and healthcare burden created by this disease, it is critical that advances in the recognition, diagnosis, and treatment of Alzheimer's disease be made. Practitioners need to stay updated on recent advances in the identification of mild cognitive impairment, the potential for early therapeutic intervention, and recent trials in the treatment of Alzheimer's disease.

Learning Objectives

At the completion of this activity, participants should be better able to:

- Understand the relationship between mild cognitive impairment and Alzheimer's disease
- Discuss recent developments in the diagnosis of Alzheimer's disease, including the role of biomarkers
- Consider the future of Alzheimer's disease treatment

Target Audience

This activity is designed to meet the educational needs of psychiatrists and neurologists.

Faculty Affiliations and Disclosures

Stephen Salloway, MD, MS, is director of neurology and the Memory and Aging Program at Butler Hospital and professor of clinical neurosciences and psychiatry at The Warren Alpert Medical School of Brown University, both in Providence, Rhode Island. Dr. Salloway is a consultant to Athena, Eisai, Janssen, Merck, Myriad, and Pfizer; receives research support from Eisai, Elan, Forest, Janssen, Myriad, Neurochem, and Pfizer; and receives honoraria from Athena, Eisai, Forest, Janssen, Novartis, and Pfizer.

Howard H. Feldman, MD, FRCPC, is professor and head of the Division of Neurology at the University of British Columbia in Vancouver. Dr. Feldman is a consultant to Axonyx, Forest, GlaxoSmithKline, Janssen, Lundbeck, Myriad, Novartis, Pfizer, sanofi-aventis, Servier, and Targacept; and receives research support from AstraZeneca, Eisai, Eli Lilly, GlaxoSmithKline, Janssen, Pfizer, and sanofi-aventis.

Nagaendran Kandiah, MBBS, is clinical research fellow in the Division of Neurology at the University of British Columbia in Vancouver. Dr. Kandiah reports no affiliation with or financial interest in any organization that may pose a conflict of interest.

Steven T. DeKosky, MD, is professor and chair of the Department of Neurology and director of the Alzheimer's Disease Research Center at the University of Pittsburgh in Pennsylvania. Dr. DeKosky is a consultant to Eisai, Eli Lilly, Forest, GlaxoSmithKline, Merck, Pfizer, and Servier; is on the advisory bureaus of AstraZeneca, Cephalon, Myriad, NeuroMedix, and NeuroPharma; and receives research support from Elan, Myriad, Neurochem, and Ono. He is supported by NIA grants AG05133, P01 AG25204, and P01 AG14449.

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Peer Review

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