

CNS SPECTRUMS®

The International Journal of Neuropsychiatric Medicine

ACADEMIC SUPPLEMENT

Alzheimer's Disease Pathways to Practice: Assessing Diagnosis and Outcome Measures

Introduction

G.T. Grossberg

The Interplay of Neurotransmitters in Alzheimer's Disease

P.T. Francis

Formulating a Clinical Practice Care Plan for the Diagnosis and Assessment of Alzheimer's Disease

W.E. Faison

Utilizing Advanced Imaging and Surrogate Markers Across the Spectrum of Alzheimer's Disease

M.A. Mintun

Rationalizing Therapeutic Approaches in Alzheimer's Disease

G.T. Grossberg

Behavioral and Neuropsychiatric Outcomes in Alzheimer's Disease

J.L. Cummings

Accreditation Statement

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This activity has been peer reviewed and approved by Eric Hollander, MD, professor of psychiatry, Mount Sinai School of Medicine. Review date: October 11, 2005.

Statement of Need and Purpose

Alzheimer's disease is a progressive disorder that negatively impacts cognitive, behavioral, and functional abilities. Alzheimer's disease currently affects ~4.5 million Americans, and the prevalence is expected to increase dramatically as the population ages. The clinical deterioration in Alzheimer's disease is, in part, a result of deficits involving several neurochemical pathways. The cholinergic system, which is the most consistently and dramatically affected neurotransmitter system in Alzheimer's disease, has been strongly implicated in the emergence of neuropsychiatric symptoms.

The pathogenesis of Alzheimer's disease is complex and not fully understood. Several factors, including amyloid plaques, neurofibrillary tangles, and inflammatory processes, are likely to contribute to the development of the disease. Acetylcholine and glutamate are involved in learning and memory and ongoing discoveries about the multiple pathophysiologic pathways involved in the development and progression of Alzheimer's has given rise to several plausible therapeutic targets. Emphasis has increasingly shifted to the accurate detection of the earliest phase of Alzheimer's. Identification of individuals with mild cognitive impairment who will develop Alzheimer's has improved via the use of neuropsychologic tests, neuroimaging, cerebrospinal fluid analysis, and other biomarkers.

New data on Alzheimer's disease therapies have become available since the publication of dementia treatment guidelines in 2001. Cholinesterase inhibitors (ChEIs) and memantine are well tolerated and have been shown to improve symptoms associated with Alzheimer's. Donepezil, galantamine, and rivastigmine are currently approved for the treatment of mild-to-moderate Alzheimer's disease.

As a consequence of global aging of the human population, the occurrence of cognitive impairment and dementia is rapidly becoming a significant burden for public health systems. Behavioral symptoms of Alzheimer's, in particular, cause great distress to caregivers, creating an emotional and financial burden that often prompts the caregiver to place the patient in a nursing facility. Primary and secondary prevention of dementia through individual and population-level interventions could reduce the burden of Alzheimer's disease. Physicians should be prepared to provide evidence-based answers to inquiries regarding treatment of Alzheimer's disease.

Target Audience

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

To Receive Credit for this Activity

Read this academic supplement, reflect on the information presented, and then complete the CME quiz found on pages 26 and 27. To obtain credits, you should score 70% or better. Termination date: November 30, 2007. The estimated time to complete this activity is 3 hours.

Disclaimer

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The quiz on Alzheimer's disease is CME-accredited by Mount Sinai School of Medicine for 3.0 credit hours.

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