

Chapter 9

Dementia and Other Neurocognitive Disorders: An Overview

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ABSTRACT

This chapter presents a foundational overview of dementia, with a focus on Alzheimer's disease (AD), the most common cause of dementia. The authors start with an overview of mild cognitive impairment, which is often a dementia precursor, looking at symptoms and diagnostic criteria. AD is reviewed in depth, from the perspective of 2011 diagnostic guideline revisions that, for the first time, outline stages of the illness and also incorporate biomarkers to clarify diagnosis and track disease progression. Recent advances from the use of CSF tests, structural and functional imaging, and genetics are discussed. These advancements pose ethical challenges for patients and caregivers. Treatment options, including non-pharmacological strategies and medications, are reviewed.

INTRODUCTION

Stakeholders in dementia research and care have, unfortunately, often juxtaposed the biomedical and person-centered approaches to addressing the significant human problem that Alzheimer's disease (AD) and the related dementias present. While viewing AD solely through the lens of biomedicine risks dehumanizing the individuals affected, focusing on the person without appreciating the effects of the disease can have a negative impact as well. A common example of the latter occurs when a care partner ascribes memory difficulties to the person (e.g., he's just not trying hard enough) rather than to the disease. Hippocrates first said, "It is more important to know what person the disease has than what disease the person has." This volume, dedicated to increasing understanding of how individuals affected with MCI, AD or another dementia, is purposefully including this chapter to help the reader understand

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the larger biomedical context in which people experience these cognitive disorders. Offering a foundation of knowledge regarding the prevalence, diagnosis, and treatment of MCI and the dementias, this chapter highlights the progress and challenges in the field, which directly impact the daily lives of the affected and their families.

Disorders of cognition are common in older adults. As will be described in this chapter, the earliest detectable stage is mild cognitive impairment (MCI), a heterogeneous disorder in which objective changes in cognitive abilities begin to impact an individual's everyday activities. Many but not all individuals with MCI will develop a major neurocognitive disorder, also known as dementia. Dementia represents a significant decline in an individual's global cognitive abilities from a previous level of performance that (a) interferes with his or her ability to function socially or occupationally and perform activities of daily living, and (b) cannot be attributed to another medical or psychiatric disease. Alzheimer's disease (AD) is the most common cause of dementia, affecting over 5 million Americans (Alzheimer's Association, 2014). By 2050, it is estimated AD will impact 135 million people globally (Alzheimer's Association, 2014). Symptoms of AD include memory loss (particularly for recent events and new information), difficulties with orientation to time and place, impaired judgment and decision-making, declining ability to carry out activities of daily living, changes in mood, behavior, and personality, and an increasing burden on caregivers for supervision and management of care. In the USA, AD is the sixth leading cause of death and the third most expensive disease, with total costs exceeding \$200 billion in U.S. dollars (Alzheimer's Association, 2014). At the present time, only symptomatic therapies are available. However, recent research advances have led to an improved understanding of risk factors, many of which are potentially modifiable; development of novel biomarkers of disease (cerebrospinal fluid, imaging, genetic); and a revision of the diagnostic criteria by the National Institute on Aging and Alzheimer Association (NIA-AA) to define a range of clinical and biomarker phenotypes from presymptomatic disease to MCI and then AD. It should be noted that AD is not the only form of dementia. Neurocognitive disorders may be caused by cerebrovascular disease, Lewy body pathology, or frontotemporal degeneration. Most commonly, patients with neurocognitive disorders have mixed pathologies that sometimes confound clinical diagnoses. In this chapter, the authors will review the current diagnostic criteria for neurocognitive impairment due to AD and how AD can be distinguished from vascular disease, Lewy body disease, and frontotemporal degeneration, with a particular focus on the evolving knowledge and use of risk factors, screening tests, and biomarkers. The authors will also consider some of the ethical implications raised by the new diagnostic criteria that have the potential to identify individuals who are likely to develop AD but do not yet manifest symptoms.

BACKGROUND

Cognitive disorders are common among older adults and pose a major public health problem in an aging population. The earliest detectable stage is MCI, marked by changes in cognition that start to limit daily functioning. Many but not all individuals with MCI develop dementia, a clinical syndrome of global, functional decline affecting a wide array of cognitive domains, including memory, language, reasoning and behavior. Dementia is distinguished from MCI by the degree of functional impairment, itself a clinical judgment. According to a definition of all-cause dementia by a 2011 NIA-AA workgroup, the cognitive or behavioral deficits impede usual functioning, mark a decline from baseline, and are not due to a major psychiatric disorder or delirium (McKhann et al., 2011).

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