

## **Evaluation and Management of Dementia**

Joseph W. Stubbs, MD, FACP  
President, American College of Physicians  
November 29, 2009

Dementia is a progressive decline in memory and other cognitive functions that impairs social or occupational function. While quite common among the elderly, it is not a normal process of aging. With estimates of the number of cases tripling by the year 2050 due to our aging population, the economic consequences of this disease could become staggering.

Risk factors for Alzheimer's disease, the most common form of dementia, include age, family history, head injuries, prior education, and cardiovascular risk factors. Research suggests that the underlying pathophysiology of Alzheimer's disease is related to abnormal accumulation of  $\beta$ - amyloid protein in the extracellular matrix around neuronal cells in the form of amyloid plaques, and to the presence of bundles of Tau proteins, called neurofibrillary tangles. Presenilin 1 and 2, trisomy 21, and apolipoprotein E4 are genetic abnormalities linked to Alzheimer's disease and are associated with the increase accumulation of  $\beta$ - amyloid plaque further substantiating the role of this pathophysiological process. The combination of amyloid plaque and neurofibrillary tangles appear to accelerate neural cell toxicity and apoptosis and trigger a pathologic inflammatory response.

No single test is available to diagnose dementia. The differential for dementia includes normal benign senescent forgetfulness, depression, mild cognitive impairment, hypothyroidism, pernicious anemia, and delirium. Achieving the diagnosis of dementia requires a careful history and physical exam, often including the perspective and observations of other family members. It also requires a formal mental status exam, and a directed series of laboratory and imaging tests. The clinician must then reconcile all of these findings. The diagnosis of dementia is made if there is impairment of memory and at least one other cognitive impairment, including apraxia, agnosia, aphasia, or impaired executive function enough to affect social and occupational activity, if the process is gradual, and if it does not involve another physical or psychological disease such as tumor, hypothyroidism or depression.

The diagnosis of dementia involves distinguishing different types which are in order of frequency: Alzheimer's disease, Vascular Dementia, Lewy Body Dementia, and Frontotemporal Dementia. A significant portion of patients with dementia have a mixed type, often a combination of Alzheimer's and vascular dementia.

Treatment goals are to enhance quality of life and maximize functional performance by improving cognition, mood, and behavior. In the management of this disease, nonpharmacologic measures such as exercise and environmental modification are often of equal or greater importance than pharmacologic ones. Medications for stabilizing or slowing the cognitive decline are in two classes, cholinesterase inhibitors, and NMDA receptor antagonists. Psychotropic medications are sometimes used for behavior

disturbances, but caution should be exercised in using these medications because of safety issues and side effects. Efforts should be made to use low doses on a time limited basis.

The time course of Alzheimer's disease is usually 6- 8 years after the onset. Attention needs to be given to the issue of caregiver stress and burnout. Physicians should educate the patient and family members on community resources that are available to help in the care of patients. As patients approach the end stage of dementia, with inability to managed ADL's without assistance, families need to be counseled regarding the poor prognosis of patients at this stage, especially if they develop febrile illnesses, pneumonia, or inability to eat. Care at this point should be directed toward comfort and palliation.