Alzheimer's Disease: A Status Report For 2002

By ACSH Staff — October 1, 2002

Based on a Scientific Review Paper by John P. Blass, M.D., Ph.D.
Director, Dementia Research Service
Burke Medical Research Institute

Executive Summary

- Alzheimer's disease is the most common cause of dementia (general mental deterioration) and occurs primarily in the elderly. It results from loss of nerve cell function in certain brain regions and leads to gradual and increasingly severe memory loss. Its victims lose the ability to function independently.
- Alzheimer's disease is defined as significant dementia with severe memory loss in combination with specific brain lesions observed after death. It was first described by the German physician Alois Alzheimer in 1907.
- Ninety percent of Alzheimer's disease occurs in people who are over 65 years of age. The number of new cases doubles in each decade of life after age 65. Epidemiologists estimate that perhaps half of those older than 85 may have Alzheimer's disease. It is estimated that about 5 million people in the U.S. and 15 million worldwide currently have Alzheimer's disease.
- The brains of persons who suffer from Alzheimer's disease undergo many changes, some of which can also be caused by other conditions. Neuritic plaques, accumulations of protein outside nerve cells, for example, occur only in Alzheimer's disease, while neurofibrillary tangles, which are twisted protein fibers that usually occur inside nerve cells, may also occur in other brain diseases. The amount of such lesions is not always highly correlated with the degree of dementia.
- Other changes to the brains of Alzheimer's disease victims include damage to the hippocampus a brain area involved with memory processing, various blood vessel disorders, and deficiencies of neurotransmitters (chemicals which allow neurons to communicate with each other). None of these occur exclusively in Alzheimer's disease.
- Alzheimer's disease is currently diagnosed by neuropsychological testing; imaging tests such
as PET scans may become more important in the future.

- The so-called amyloid cascade hypothesis is currently the most widely held explanation of the causes of Alzheimer's disease. Basically, it assumes that the beta-amyloid protein deposits are toxic to the brain. This theory is not universally accepted, however.
- Other things that have been suggested to be causal agents include: neurofibrillary tangles, inflammation, free radicals, and faulty brain metabolism. It is likely that many factors interact to contribute to the disease and ultimately lead to dementia.
- Known risk factors for Alzheimer's disease include increasing age, four different genes (three of which are mutations), and environmental factors such as head injury. Very poor education is strongly associated with an increased risk of Alzheimer's disease. Toxic substances have been considered possible causes, but there are no good data supporting this view.
- Alzheimer's disease may progress steadily or patients may remain stable for a year or more.
- Currently, the three main modes of treatment for Alzheimer's disease patients are behavioral treatments, replenishment of deficient neurotransmitters, and prevention of nerve cell damage.
- A number of pharmaceutical agents are undergoing intense scrutiny to determine which would be helpful in the prevention or treatment of Alzheimer's disease.


COPYRIGHT © 1978-2016 BY THE AMERICAN COUNCIL ON SCIENCE AND HEALTH


Links