



Affects Alzheimer's disease in brain functioning

Athanasios K Petridis*

Department of Neurosurgery, University of Schleswig Holstein, Germany.

*Corresponding author: Athanasios K Petridis. Department of Neurosurgery, University of Schleswig Holstein, Germany, E-mail: med.uni-duesseldorf.de

Received Date: May 10, 2021; Received Date: May 24, 2021; Accepted Date: May 31, 2021

Editorial

Alzheimer's disease is an irreversible, progressive brain disorder that slowly destroys memory and thinking skills, and, eventually, the ability to carry out the simplest tasks. In most people with Alzheimer's, symptoms first appear in their mid-60s. Estimates vary, but experts suggest that more than 5.5 million Americans, most of them age 65 or older, may have dementia caused by Alzheimer's. Alzheimer's is the most common cause of dementia among older adults.

Dementia is the loss of cognitive functioning—thinking, remembering, and reasoning—and behavioral abilities to such an extent that it interferes with a person's daily life and activities. Alzheimer's disease is named after Dr. Alois Alzheimer. In 1906, Dr. Alzheimer noticed changes in the brain tissue of a woman who had died of an unusual mental illness. Her symptoms included memory loss, language problems, and unpredictable behavior. These plaques and tangles in the brain are still considered some of the main features of Alzheimer's disease.

Another feature is the loss of connections between nerve cells (neurons) in the brain. Scientists continue to unravel the complex brain changes involved in the onset and progression of Alzheimer's disease. It seems likely that changes in the brain may begin a decade or more before memory and other cognitive problems appear. During this preclinical stage of Alzheimer's disease, people seem to be symptom-free, but toxic changes are taking place in the brain. Abnormal deposits of proteins form amyloid plaques and tau tangles throughout the brain.

Memory problems are typically one of the first signs of cognitive impairment related to Alzheimer's disease. Some people with memory problems have a condition called mild cognitive impairment (MCI). The first symptoms of Alzheimer's vary from person to person. For many, decline in non-memory aspects of cognition, such as word-finding, vision/spatial issues, and impaired reasoning or judgment, may signal the very early stages of Alzheimer's disease. Memory loss is the key symptom of Alzheimer's disease. Early signs include difficulty remembering recent events or conversations. As the disease progresses, memory impairments worsen and other symptoms develop. At first, a person with Alzheimer's disease may be aware of having difficulty remembering things and organizing thoughts. A family member or friend may be more likely to notice how the symptoms worsen.

The Basics of Alzheimer's disease

Scientists are conducting studies to learn more about plaques, tangles, and other biological features of Alzheimer's disease. Advances in brain imaging techniques allow researchers to see the development and spread of abnormal amyloid and tau proteins in the living brain, as well as changes in brain structure and function. Scientists are also exploring the very earliest steps in the disease process by studying changes in the brain and body fluids that can be detected years before Alzheimer's symptoms appear. Findings from these studies will help in understanding the causes of Alzheimer's and make diagnosis easier.

Alzheimer's Disease Genetics

Most people with Alzheimer's have the late-onset form of the disease, in which symptoms become apparent in their mid-60s. Researchers have not found a specific gene that directly causes late-onset Alzheimer's. However, having one form of the apolipoprotein E (APOE) gene does increase a person's risk. This gene has several forms. One of them, APOE ε4, increases a person's risk of developing the disease and is also associated with an earlier age of disease onset. Also, scientists have identified a number of regions of interest in the genome (an organism's complete set of DNA) that may increase or decrease a person's risk for late-onset Alzheimer's to varying degrees.

Alzheimer's disease is a progressive neurologic disorder that causes the brain to shrink (atrophy) and brain cells to die. Alzheimer's disease is the most common cause of dementia — a continuous decline in thinking, behavioral and social skills that affects a person's ability to function independently.

The early signs of the disease include forgetting recent events or conversations. As the disease progresses, a person with Alzheimer's disease will develop severe memory impairment and lose the ability to carry out everyday tasks.

Medications may temporarily improve or slow progression of symptoms. These treatments can sometimes help people with Alzheimer's disease maximize function and maintain independence for a time. Different programs and services can help support people with Alzheimer's disease and their caregivers. There is no treatment that cures Alzheimer's disease or alters the disease process in the brain. In advanced stages of the disease, complications from severe loss of brain function — such as dehydration, malnutrition or infection — result in death.

The goals of those studying cellular neuroscience are to describe the structural properties of these channels and pumps, the basis of their chemical and electrical control mechanisms, their function on individual neurons and synapses, and their spatial localization on cells. Methods include microelectric recordings from individual cells, advanced microscopic methods, immunocytochemistry, and the biochemical and molecular methods common to all studies of protein function.

Citation: Athanasios K Petridis (2021) Affects Alzheimer's disease in brain functioning. J Neurosci Clin Res 2021, 6:3.