

Perspective

AN OVERVIEW ON ALZHEIMER'S DISEASE: ITS RISK FACTORS AND TREATMENT METHODS

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Description

Alzheimer's disease is a progressive and irreversible neurodegenerative disorder that primarily affects older adults, leading to a decline in memory, cognitive abilities, and overall functioning. This debilitating condition has a profound impact not only on the individuals diagnosed but also on their families and caregivers.

Causes and risk factors

While the exact cause of Alzheimer's disease remains unknown, it is believed to be influenced by a combination of genetic, environmental, and lifestyle factors. Genetic predisposition plays a significant role, with specific genes such as the Apolipoprotein E (APOE) $\epsilon 4$ allele being associated with an increased risk. Other risk factors include age, family history of the disease, cardiovascular conditions, diabetes, and certain lifestyle choices such as smoking and a sedentary lifestyle.

Symptoms and progression

Alzheimer's disease typically starts with mild memory lapses and gradually progresses to severe cognitive impairments. Common early symptoms include forgetfulness, difficulty in finding words, getting lost in familiar places, and impaired judgment. As the disease advances, individuals may experience disorientation, mood changes, confusion, and behavioral problems. In the later stages, individuals may lose the ability to recognize loved ones, perform everyday tasks, and communicate effectively.

Diagnosis and screening

Diagnosing Alzheimer's disease can be challenging as there is no definitive test. Healthcare professionals rely on a combination of medical history, physical examinations, cognitive assessments, and laboratory tests to rule out other possible causes and reach a diagnosis. Advanced brain imaging techniques, such as Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET), can help identify characteristic brain changes associated with Alzheimer's disease.

Treatment and management

Currently, there is no cure for Alzheimer's disease. However, various treatment options aim to manage symptoms, slow disease progression, and improve the quality of life for affected individuals. Cholinesterase inhibitors, such as donepezil, rivastigmine, and galantamine, are commonly prescribed to enhance neurotransmitter activity and temporarily alleviate cognitive symptoms. Another medication, memantine, is used to regulate glutamate activity and may benefit individuals in the later stages of the disease. Non-pharmacological interventions, including cognitive stimulation, physical exercise, and social engagement, also play a vital role in managing the symptoms and maintaining overall well-being.

Support and caregiving

Alzheimer's disease places a significant burden on family members and caregivers who provide continuous support and assistance to their loved ones. Caregivers often experience emotional stress, physical exhaustion, and financial strain. It is

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crucial to provide caregivers with adequate resources, respite care, and support groups to help them navigate the challenges associated with caregiving.

Research and future directions

Alzheimer's disease research continues to be a critical area of focus. Efforts are underway to understand the underlying mechanisms of the disease, develop effective disease-modifying treatments, and explore potential preventive strategies. Advancements in technology, such as

artificial intelligence and biomarker research, offer promising avenues for early detection and intervention. Additionally, raising public awareness, reducing stigma, and promoting brain health through lifestyle modifications are essential in addressing the global impact of Alzheimer's disease.

As the population ages, the prevalence of Alzheimer's disease is expected to rise significantly, making it imperative to increase research funding, support caregivers, and improve access to quality healthcare.

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