Biological Times

Volume No. 3 | Issue No. 11 | Pages 25-26

Alzheimer's Disease

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ABSTRACT

One of the most common neurodegenerative disorders, Alzheimer's disease affects millions of individuals globally and rises in incidence and prevalence with age. Cognitive decline is linked exclusively to cholinergic neuron loss, its defining feature. AD is a complicated condition that is associated with several risk factors, including genetics, aging, damage to the vascular system, head trauma, infections (such as bacterial, viral, and parasitic infections), and environmental factors (such as trace elements and heavy metals). The fact that there are currently few treatments for this illness that primarily target symptom relief makes the issue even more basic. Even though the disease's cause is yet unknown, this article focused on what Alzheimer's disease is, its causes, diagnosis, treatment, and care.

Keywords: Alzheimer's disease, neurological disorder, diagnosis, treatment, care

To cite this article: Ismael SS, SA Ajeel, SA Abdullah, SF Mustafa & DS Ismael. Alzheimer's Disease. Biological Times. 2024 November 3(11): 25-26.

Introduction

Alzheimer's disease (AD) is a condition that causes degeneration of brain and is considered the major cause of dementia, which mainly affects the elderly and is typified by a loss of thinking and independence in one's everyday activities (1, 2). Depending on the estimates, fifty million people worldwide suffer from this neurological condition, and tens of millions more are indirectly impacted as they cope with years of cognitive deterioration in a loved one (3, 4). It is a neurodegenerative condition that progresses slowly and is typified by neuritic plagues and neurofibrillary tangles (5, 6). The purpose of this article was to give a brief overview of Alzheimer's disease.

Causes of Alzheimer's Disease

AD is a complicated condition that is associated with several risk factors, including genetics, aging, damage to the vascular system, head trauma, infections (such as bacterial, viral, and parasitic infections), and environmental factors (such as trace elements and heavy metals). Alzheimer's disease pathological abnormalities (synaptic degeneration, NFTs, and Aβ). Two theories have been put third cause as the primary cause of AD, but some contend that cholinergic dysfunction is a major risk factor, while others contend that changes in the synthesis and processing of amyloid β-protein serve as the primary trigger. But as of right now, no recognized hypothesis exists to explain the pathophysiology of AD, as illustrated in Fig. 1 (7, 8).

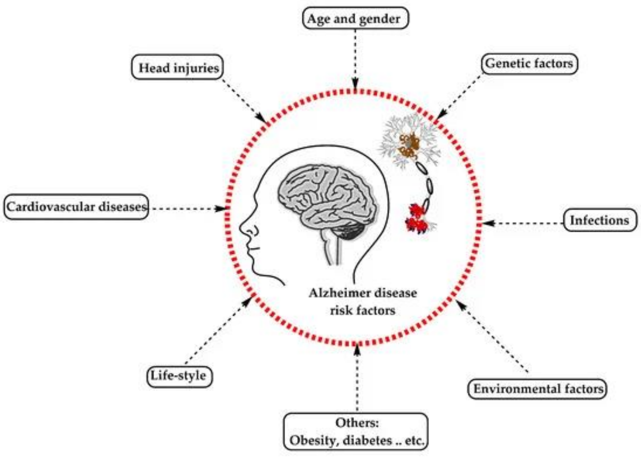

Fig. 1: Causes of Alzheimer's disease (5)

Epidemiology

Approximately 100 million individuals worldwide are expected to be affected by this most common type of dementia by 2050 (9, 10). The World Health Organization has therefore designated AD as a disease of public health priority (10). According to a Portuguese study on the epidemiology of dementia and AD, incidence and prevalence rise with age, roughly doubling every five years (11). Based on the number of patients over 60 who have been diagnosed with dementia and the knowledge that AD accounts for 50–70% of cases, they calculated that between 80,000 and 112,000 persons in Portugal were diagnosed with AD in 2013 (11). Age is, in fact, the most significant risk factor for this condition, as seen by the higher frequency in the elderly population (those aged 65 to 85) (12, 13).

Symptoms of Alzheimer's symptoms

Alzheimer's symptoms can vary from person to person. Usually, one of the disease's initial symptoms is memory loss. The early stages of Alzheimer's disease may also be indicated by a decline in non-memory components of cognition, such as difficulty understanding visual imagery and spatial relationships, difficulty finding the proper word, and impaired thinking or judgment. As the illness worsens, symptoms worsen and include behavioral abnormalities and greater confusion (1,6).

Diagnosis

In order to identify Alzheimer's dementia, medical experts administer tests that assess cognitive abilities and memory impairment. They also detect behavioral changes and assess functional ability. A battery of examinations can exclude additional potential reasons for symptoms. The estimation of vitamin B12 and MRI scanning for brain are used, and other tests beyond the patient's medical and familial history should be performed on a patient suspected of having AD (14,15, 16).

Treatment

Drugs and treatments can help control symptoms and enhance the quality of life, but there is at present no cure for AD. Acetylcholinesterase inhibitors are important drugs that raise acetylcholine levels to promote brain transmission. Examples of these include galantamine, donepezil, and rivastigmine. These medications are usually used for Alzheimer's disease in its mild to severe cases. A memantine is used to treat mild to severe AD in order to preserve brain tissue and enhance cognitive abilities. Although these therapies may reduce signs, they do not halt the course of the illness (17, 18).

For the management of Alzheimer's, non-pharmacological treatments such as cognitive rehabilitation and cognitive stimulation therapy are also essential. Reminiscence therapy and life story writing can increase mood and well-being, while these therapies aid in memory and problem-solving. Antipsychotics, antidepressants, and anxiety medications may be recommended to treat behavioral symptoms, including aggression and anxiety, although they are usually used with caution because of the possibility of adverse consequences (19, 20)

Care for a person who has AD

It is important to comprehend the progressive nature of AD and modify care to meet the needs of each patient. Establishing a regular schedule, promoting frequent activities, and keeping lines of communication open are crucial. Making sure the person maintains proper hygiene, eats a healthy diet, and drinks plenty of water is crucial. It is also essential to support the individual's self-esteem and make sure they are safe. As illness progresses, caregivers should handle paperwork such as creating the power of attorney and looking into long-term care alternatives. It is advised that caregivers take care of themselves and look for support from organizations such as the Alzheimer's Association to prevent burnout. To meet the requirements of both the patient and the caregiver, Alzheimer's caregiving calls for tolerance, empathy, and proactive planning (20, 21).

Conclusion

AD is a neurodegenerative illness that can be identified by a progressive loss of cognitive function. The present treatments only target symptom relief and have little influence on disease's progression. Because the disease has a complex nature, its true cause is still unknown despite the advancements made in recent decades.

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