The Slow Goodbye: Living with Alzheimer's

Muhammad Inaam Ul Haq Shah

1st Year MBBS, Islamabad Medical and Dental College, Islamabad, Pakistan

Key points:

- Introduction to Alzheimer's
- Causes of Alzheimer's
- Diagnosis
- Treatment

Introduction

Alzheimer's disease is a slowly progressing disorder of the brain that mainly affects older individuals. It is considered the leading cause of dementia across the world and significantly impacts a person's ability to remember, think clearly, and perform everyday tasks.[1] As the condition advances, it becomes increasingly difficult for patients to live independently.

Causes

The development of Alzheimer's disease is associated with several changes occurring inside the brain. Two major features include the buildup of amyloid plaques outside nerve cells and the formation of tau protein tangles within them. These abnormalities interfere with communication between brain cells and eventually lead to their damage and death.[1,2] Recent research has also shown that factors such as chronic inflammation, oxidative stress, and reduced clearance of toxic proteins contribute to the worsening of the disease.[2]

In its early stage, the disease usually presents with mild memory problems, such as difficulty recalling recent events. As it progresses, patients may experience challenges in speaking, reasoning, and recognizing familiar people or surroundings. In advanced stages, behavioral and psychological symptoms such as confusion, irritability, mood swings, and even hallucinations may develop, placing a significant burden on caregivers.[5]

Diagnosis

The diagnosis of Alzheimer's disease is mainly based on clinical evaluation, supported by modern diagnostic tools. Imaging techniques such as MRI can reveal shrinkage in certain brain areas, while PET scans help detect abnormal protein deposits. In addition, cerebrospinal fluid (CSF) analysis is increasingly used to identify specific biomarkers, allowing for an earlier and much more accurate diagnosis.[2]

Treatment

Management of Alzheimer's disease includes both medications and supportive care. Commonly used drugs like donepezil, rivastigmine, and memantine help in improving symptoms temporarily but do not stop disease progression. However, newer therapies introduced in recent years, such as lecanemab and donanemab, aim to target amyloid plaques directly and may help slow the progression of the disease, especially in its early stages.[3,4] Non-pharmacological approaches are equally

important in patient care. Activities such as mental exercises, regular physical activity, and strong social support can improve overall well-being. Additionally, controlling risk factors like hypertension, diabetes, and unhealthy lifestyle habits may help delay the onset or progression of Alzheimer's disease.[5]

Conclusion

In conclusion, Alzheimer's disease remains a major health concern worldwide. However, continuous research and advancements in treatment are offering new hope for better management and improved quality of life for patients in the future.

References

1. Knopman DS, Amieva H, Petersen RC, Chételat G, Holtzman DM, Hyman BT, Nixon RA, Jones DT. Alzheimer disease. Nature reviews Disease primers. 2021 May 13;7(1):33.
2. Jack CR Jr, Bennett DA, Blennow K, et al. NIA-AA research framework update. Alzheimers Dement. 2024;20(1):1–22.
3. Van Dyck CH, Swanson CJ, Aisen P, Bateman RJ, Chen C, Gee M, Kanekiyo M, Li D, Reyderman L, Cohen S, Froelich L. Lecanemab in early Alzheimer's disease. New England Journal of Medicine. 2023 Jan 5;388(1):9-21.
4. Sims JR, Zimmer JA, Evans CD, Lu M, Ardayfio P, Sparks J, Wessels AM, Shcherbinin S, Wang H, Monkul Nery ES, Collins EC. Donanemab in early symptomatic Alzheimer disease: the TRAILBLAZER-ALZ 2 randomized clinical trial. Jama. 2023 Aug 8;330(6):512-27.
5. Livingston G, Sommerlad A, Orgeta V, Costafreda SG, Huntley J, Ames D, Ballard C, Banerjee S, Burns A, Cohen-Mansfield J, Cooper C. Dementia prevention, intervention, and care. The lancet. 2017 Dec 16;390(10113):2673-734.