

DEGENERATIVE DISEASE OF THE NERVOUS SYSTEM: ALZHEIMER'S

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Abstract: This scientific article focuses on Alzheimer's disease, which is mainly prevalent in older adults. We will explain the importance of this disease by paying special attention to the etiology, epidemiology and clinical manifestations of Alzheimer's. The article also discusses recent advances in diagnostic and therapeutic approaches and sheds light on emerging strategies to improve patient outcomes. Alzheimer's disease is a major global health problem with diverse epidemiology, risk factors and treatment options[1]. This article aims to provide an overview of the current state of the art in treating Alzheimer's disease and to provide new insights into the pathogenesis and causes of Alzheimer's disease.

Key words: repetition of stories, memory difficulties, confusion, apathy, personality changes, neurodegenerative disease.

INTRODUCTION.

Alzheimer's disease is more common in older Australians than ever before, but it is not a normal part of ageing. Alzheimer's disease cannot be cured, but some medications can help improve quality of life. The clinical manifestations and symptoms of Alzheimer's disease present unique challenges. This article aims to provide an overview of the current state of the art in treating Alzheimer's disease and to provide new insights into the pathogenesis and causes of Alzheimer's disease.

Alzheimer's disease is a neurodegenerative disease that occurs mainly in older adults, causing problems with memory, thinking and behavior. It is the most common type of neurodegenerative disease, characterized by the gradual damage and death of brain cells.

Epidemiology: Long-term studies (primarily in healthy populations monitored for years) have shown that there are 10-15 new cases of all types of dementia per 1,000 people, and 5-8 cases of Alzheimer's disease per 1,000 people. Aging is the main risk factor reflected in statistics: the risk of developing it approximately doubles every 5 years after the age of 65, from 3 cases at age 65 to 69 cases per 1,000 people by age 95.

The incidence of Alzheimer's disease in women is especially high after the age of 85. The incidence of the disease in people over 65 years of age (per thousand people) is 3 cases at 65-69 years of age, 6 cases at 70-74 years of age, 9 cases at 75-79 years of age, 23 cases at 80-84 years of age, 40 cases at 85-89 years of age, and 69 cases at 90 years of age[2].

Onset of the disease: The disease begins with subtle symptoms and progresses over time. Often, short-term memory impairment is observed in the early stages, for example; inability to remember recently learned information. As the disease progresses, long-term memory is lost, speech and cognitive disorders occur, and the patient loses a sense of indifference and self-confidence in the environment. The gradual loss of body functions can lead to death.

1. Memory loss: Alzheimer's disease usually begins with a decline in the ability to remember new information. This causes problems with short-term memory. For example, the patient cannot remember recent events, conversations with someone, or things they have placed[3].

2. Decline in thinking and planning: Patients have difficulty thinking clearly and planning. For example, they begin to have difficulty doing calculations, organizing daily tasks, and completing familiar tasks.

3. Disorientation and difficulty understanding location. Patients with Alzheimer's may occasionally lose their sense of time and place. For example, they may not remember where they are or how they got there.

4. Mental and behavioral changes: This disease is not only cognitive, but also emotional and social. It can also cause changes in the brain. Patients may feel anxious, depressed, angry, or confused.

Disease prevention

A Mediterranean diet, which includes bread, whole grains, fruits and vegetables, olive oil and other cereals, fish, and red wine, is very beneficial in reducing the risk and slowing the progression of Alzheimer's disease. Certain vitamins, including B3, C, B12, and folic acid, have been linked to a reduced risk of the disease in some studies, but other studies have not shown a significant effect on the onset, course, or side effects of the disease. Curcumin, found in common spices, has been shown to prevent certain pathological changes in the brain in mice[4].

Some studies have shown that people exposed to industrial magnetic fields, aluminum, or solvents from metals are at increased risk of developing Alzheimer's disease. Some of these publications have been criticized for their poor quality, and other studies have provided little information about the role of environmental factors in the development of Alzheimer's disease. Scientists from the Institute of Biology of the Russian Academy of Sciences, in collaboration with researchers from Moscow State University and King's College London, have shown that zinc ions can trigger the process of converting protective peptides into killer peptides. There are theories that this may lead to the development of drugs that block the aggregation of beta-amyloid peptides initiated by zinc ions[5].

In addition, a number of treatments have been developed to eliminate Alzheimer's disease, stop its progression, and alleviate symptoms. The effectiveness of treatment depends on the early detection and timely diagnosis of the disease. If the disease is detected earlier, all measures taken will be even more effective.

There are two main directions in the fight against Alzheimer's disease. Drug therapy - allows you to influence the links of the pathological process. Therefore, in Alzheimer's disease, drugs are prescribed that block cholinesterase and prevent the formation of amyloid and plaques. These are galantamine, donepezil and revastigmine. In addition, revastigmine is prescribed in the form of a patch, which is attached to the skin. The above-mentioned drugs improve memory and speech, help with concentration and speed up reactions. Cerebrolysin and Actovegin are prescribed to improve blood circulation in the brain and protect neurons.

Thioridazine is prescribed to patients to soften nerve tissue and combat insomnia. Glycine is recommended for patients to relieve psycho-emotional stress. Psychosocial therapy allows patients in the initial stage of Alzheimer's disease to gradually adapt to the disease. Working with memories, performing intellectual tasks, and communicating stimulate the brain and have a positive effect on the patient's psycho-emotional state. Such work can be individual or group with each patient. Thus, a universal treatment for Alzheimer's disease still does not exist at the present time. At the same time, it is possible to improve the patient's condition and alleviate the progression of the disease. For this, it is important to make a diagnosis as early as possible and choose the right treatment. When symptoms of Alzheimer's are suspected, a series of cognitive tests are performed to clarify the diagnosis, and if possible, magnetic resonance imaging (MRI) is performed[6].

Due to the variability in the duration of the disease, the individual prognosis is difficult, and it can develop in a latent form for a long time before symptoms become noticeable and a diagnosis is made. The average life expectancy after diagnosis is about seven years, and less than three percent of patients live more than fourteen years. Currently, there is insufficient information about the causes and course of Alzheimer's disease.

The main symptoms of the disease are the accumulation of amyloid plaques and neurofibrillary tangles in brain tissue. Current treatments provide some relief, but so far they have not been able to stop or slow the progression of the disease. In 2013, Deep Transcranial Magnetic Stimulation (Deep TMS) was approved by the FDA for the treatment of Alzheimer's disease. Pfizer and Johnson & Johnson have announced that all other research in this area has been halted. There is currently no specific drug that can prevent or cure Alzheimer's disease. Many methods have been proposed to prevent Alzheimer's disease, but there is no information on the effect on the course and severity of the disease. To prevent and control the disease, it is often necessary to physical exercises, mental work activities and a balanced diet are recommended.

In 2016, Israeli scientists reported that their drug completely reversed the symptoms of Alzheimer's disease in mice. Alzheimer's disease is one of the most serious financial problems for the population in developed countries

Diagnosis

- CT scan of the brain
- MRI of the brain
- Ultrasound of the head For the early diagnosis of Alzheimer's disease, it is important to correctly collect anamnesis.

Key points:

- Patient's symptoms: The patient may describe his problems himself, but changes may not be noticeable to others.

- Observations of relatives: Sometimes relatives may notice symptoms that the patient himself does not notice.

- Key signs: repetition of stories, memory difficulties, confusion, inability to perform everyday tasks, impaired sense of time and space, apathy, personality changes.

The following are used to make a more accurate diagnosis:

- Specific tests: For example, the MMSE scale to assess cognitive functions, memory, speech, and emotional state.

- Imaging methods: CT and MRI help to exclude tumors and other diseases that can cause dementia.

- PET scan: allows you to see amyloid plaques in the brain.

- Cerebrospinal fluid analysis: helps confirm the diagnosis by showing a decrease in the concentration of α - β -42 amyloid protein and an increase in tau protein.

Differential diagnosis is necessary to exclude other causes of dementia:

- CT and MRI: exclude tumors in the brain.

- UTA of the cerebral vessels: identifies dyscirculatory encephalopathies.

- Comparison with other diseases: Alzheimer's disease differs from Parkinson's disease and Pick's disease, which have their own characteristic symptoms and pathogenetic mechanisms.

Alzheimer's disease treatment

Alzheimer's disease cannot be cured, but its progression can be slowed down with medications and complementary methods.

Treatment

Medications:

- Cholinesterase inhibitors: improve the condition in the early stages.

- Memantine: protects the brain from toxic glutamate.

- Additionally: drugs to improve blood circulation, antidepressants and antioxidants.

Psychosocial support: Exercises to train memory, instructions and signs on objects to maintain independence, stress reduction

Traditional medicine: ginkgo biloba: stimulates brain activity, herbal teas, decoctions and infusions to support the nervous system.

Alzheimer's disease progresses, leading to a complete loss of the ability to provide self-care and perform daily tasks. The patient should not be left alone, as he may create dangerous situations for himself and those around him (for example, forgetting to turn off the water or gas).

Depends on the care of the patient. Although the disease itself is not fatal, the patient may die from an accident, late-stage weakness, or concomitant diseases.

Risk group.

Alzheimer's disease most often occurs in older people over 65 years of age, especially after 70, when the risk is about 30%. Women are more susceptible to the disease, and although hereditary predisposition is not the main cause, there is a tendency to an early form of the disease. Risk factors include vascular diseases, head injuries, and toxic effects. The disease is also more common in people engaged in unskilled labor, since mental activity helps to form interneuronal connections, which makes them more difficult to break.

CONCLUSION

This article reviews the comprehensive diagnostics, screening methods, prevention and treatment measures for Alzheimer's disease, which are not completely curable, but whose incidence in the elderly is high, but which can be prevented, prolonged life, and early detection, as well as clinical forms.

This article will serve as a comprehensive resource for researchers and health professionals involved in the care and study of patients with Alzheimer's disease. As our understanding of Alzheimer's disease increases, it will become the basis for more effective diagnostic and treatment strategies.

REFERENCES:

1. Kaminsky, Yu. G. Popular and not very popular about Alzheimer's disease / Yu. G. Kaminsky, E. A. Kosenko. — Librom, 2009. — 136 p. — ISBN 978-5-397-00194-6
2. Dzhebelli J. In pursuit of memory: History of Alzheimer's disease. / Per. English — M.: AST, 2022. — 336 p. — ISBN 978-5-17-148050-9
3. Toyn, J. What lessons can be learned from failed Alzheimer's disease trials? : [eng.] // Expert review of clinical pharmacology. — 2015. — Vol. 8, no. 3. — P. 267–269. — doi:10.1586/17512433.2015.1034690. — PMID 25860157.
4. Alzheimer's disease // Neurodegenerative diseases: ucheb. posobie / Sost.: R.V. Magjanov, K.Z. Bakhtiyarova, E.V. Pervushina. — Ufa: FGBOU VO BGMU Minzdrava Rossii, 2018. — S. 11-30. — 96 p.
5. <https://www.youtube.com/watch?v=GgG9GBsGZEs>
6. https://www.youtube.com/watch?v=4WZv_quCyvc