

tients with tuberculosis with autoimmune thyroiditis and subclinical hypothyroidism restores normal levels of selenium in the blood and results in improved immune response. The use of sodium selenite may be recommended for patients with selenium-deficient autoimmune thyroiditis.

THE MAIN APPROACH IN THE TREATMENT OF ALZHEIMER'S DISEASE

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Alzheimer's disease (AD) is a degenerative brain disease and the most common cause of dementia. According to the Alzheimer's Association, a nonprofit organization from 2000 to 2015, mortality from stroke, heart disease and prostate cancer decreased by 21%, 14% and 9%, respectively, while the death rate from AD increased by 123%. AD is considered the sixth among the most significant causes of death in the United States and the fifth among the most significant causes of death among Americans aged ≥ 65 years. In 2013 the total payments for medical and long-term care, for people aged ≥ 65 years with dementia, were estimated at \$ 203 billion. In 2019, this amount has increased to \$ 290 billion. Currently, 5.8 million Americans live with this diagnosis. In developing countries, about 4.6 million new cases of dementia are reported each year, with the highest growth rates projected in Asian countries and China.

The most common signs are memory loss, forgetting recently acquired information (such as conversations, names or events), language problems, problem solving, and other cognitive skills that affect a person's ability to perform daily activities. Early clinical symptoms of AD include difficulty remembering recent events, the need to rely more and more on memory aids (reminder notes or electronic devices), assisted self-care processes, and apathy and depression.

Then there are problems with planning of certain actions and difficulties with concentration on them attention, it takes much more time than before for their implementation. Later symptoms include impaired communication, disorientation, confusion, behavior change and, ultimately, difficulty in speaking, swallowing and walking. People with AD may lose track of dates, seasons and time, confusing time or place. Sometimes they may forget where they are or how they got there. Problems with understanding something deepen unless it happens immediately. In the last stages of the disease, people are in bed and need round the clock care. In AD, there is damage or destruction of neurons that are not only responsible for cognitive function, but also those that allow a person to perform the basic functions of the body, such as swallowing and walking. A distinctive feature of this pathology is the progressive accumulation in the brain of beta-amyloid (plaque) protein outside neurons and tau - protein (tangles) inside neurons, which ultimately leads to neuronal damage and death. Risk factors include cardiovascular disease, hypertension, diabetes, protracted stress states, as well as smoking and alcohol consumption, overweight, lack of social

contacts. The currently available methods of therapy can only slightly affect its symptoms.

Currently in the world of medicine there are only two pharmacological groups of drugs that have an effective evidence based and positive recommendations in the treatment of AD: acetylcholinesterase inhibitors (AChEI) - donepezil, galantamine, rivastigmine and non-competitive NMDA receptor antagonist – memantine. Usually treatment begins with AChEI monotherapy, but in cases lack of effectiveness, memantine is added. The drugs have different mechanisms of action, but the feature of clinical use of AChEI and memantine is step therapy. The purpose of this approach is to reduce the risk of adverse reactions from the body. The optimal therapeutic dose is determined by a gradual increase in the administration of the drug by 5 mg/week during the first three weeks: week 1 (day 1-7) - ½tab. (5 mg/day);

week 2 (day 8-14) - 1tab (10 mg/day); week 3 (day 15-21) - 1½ tab. (15 mg/day); week 4 - 2 tabs (20 mg/day) daily. The recommended maintenance dose for adults and the elderly is 20 mg/day. Further, tolerability and dosage of drugs are regularly evaluated within three months of initiation of treatment. According to clinical recommendations, supportive therapy continues until the positive effect and tolerability remain favorable. If these factors are not respected, treatment is discontinued.

The treatment of dementia at the current stage of medicine is focused on eliminating amyloid plaques, while they are a consequence, but not a cause of the disease. The drugs have only a limited effect on time and cannot stop or significantly slow down the destructive course of the disease. Many scientists are working hard to address this, trying to use a systematic approach to treat patients. A complex therapeutic program has been developed that includes complex dietary changes, brain stimulation, exercises, sleep optimization, specific drugs and vitamins.

The causes of AD are not only the progressive accumulation in the brain of beta-amyloid and tau-protein, which leads to neuronal damage and death, but a rather large list of chronic diseases. Modern therapy with drugs from the group of AChEI and memantine can only slightly influence the symptoms of this pathology. Preventive measures in the fight against AD are: treatment of cardiovascular and other chronic diseases, regular physical activity, healthy eating. Lifelong learning and cognitive training can support brain function and reduce the risk of dementia.