QUALITY OF LIFE IMPAIRMENTS IN HUNTINGTON'S DISEASE (LITERATURE REVIEW AND OWN DATA)

Usmanov Firdavs Bakhtiyorovich
Assistant Professor, Department of Clinical Sciences, Zarmed University

Abstract: Huntington's disease (HD) is a rare, incurable, hereditary neurological disorder that causes the progressive breakdown of nerve cells in the brain. Huntington's chorea is a progressive neurodegenerative hereditary disorder that is transmitted from generation to generation in an autosomal dominant manner. Huntington's chorea occurs in 4-6 cases per 100,000 population (4-6:100,000). The classic symptom is chorea, which is the appearance of hyperkinesis, i.e. uncontrolled movements. This is one of the main features of the disease, which is considered to be the anticipation phenomenon, i.e. the disease progresses gradually and begins at a young age [1]. The mutant huntingtin gene has a repeat of the trinucleotide sequence CAG from 40 to 80. The pathogenesis of HD is multifaceted and involves glutamine aggregation, mitochondrial and oxidative stress, mitochondrial-related pathway dysfunction, and DNA damage. Currently, two drugs, tetrabenazine and deutetrabenazine, are approved for the treatment of HD.

Keywords: Huntington's disease, chorea, anticipation phenomenon, dementia, apathy

Objective: To analyze a review of the literature on Huntington's disease worldwide and in the Republic of Uzbekistan.

The urgency of the problem: Huntington's disease (HD) is a rare congenital neurological disorder characterized by cognitive and psychiatric dysfunction. The current incidence of HD in the United States is 6.52 per 100,000 people. This is higher than the global HD rate [2]. The clinical description of HD was first established in 1872 by the American physician George HD, and in 1993, scientists identified the gene that causes HD (Huntington's Disease Society of America, 2023). This gene is located on chromosome 4 and is responsible for the production of a protein called huntingtin. The normal huntingtin protein plays an important role in axonal transport. The normal huntingtin gene contains a three-base sequence, CAG, repeated 11-29 times. The mutant huntingtin gene contains 40-80 repeats of this CAG sequence. Based on global surveys from 1985 to 2010, the overall new cases of HD were estimated as follows. The overall global prevalence was estimated to be 2.71 per 100,000 population. A survey conducted from 2003 to 2016 showed that the incidence rate of HD in the United States was 6.52 per 100,000 population. The average age of onset of HD is 40 years. If

one of the parents has HD, the probability of their children developing the disease reaches 50%. Patients live an average of 17-20 years after the onset of the disease. The onset and severity of HD development are determined by the number of CAG repeats in the gene [3]. 40 or more trinucleotide CAG repeats are associated with GK. A repeat of 26 or less is considered normal. CAG repeats in the range of 27-39 are considered intermediate. Patients with an intermediate number of repeats may not have the disease. Repeat instability is a condition in which parents, usually fathers, have an intermediate number of CAG repeats compared to those with an intermediate number of CAG repeats. Therefore, intermediate ADHD can occur in children even if it is not present in the parents. Diagnosis of ADHD requires several types of tests. In addition to family and medical history, neurological examinations, neuropsychological tests, psychiatric evaluations, general analyses, brain imaging, and genetic tests are used together to diagnose ADHD[5]. Emotional and psychiatric symptoms. Reflexes, muscle strength, balance, touch, vision, hearing, and mood are also tested. Neuropsychological tests include: standardized tests designed to assess memory, thinking, speaking, reasoning, and mental agility. Psychiatric evaluations include a more in-depth examination of mood, emotions, behavioral patterns, judgment, auditory skills, and disorganized or disorganized thinking. After these tests, the patient is given a magnetic resonance imaging (MRI) or computed tomography (CT) scan to examine the structure and therefore function of the brain. If these tests indicate a diagnosis of HD or if the patient has a family history of HD, the final recommended test is genetic testing. Genetic testing confirms the diagnosis of HD. Although genetic testing is the most accurate way to diagnose HD, the decision to undergo testing is often difficult because of the impact the results may have on one's life. This test analyzes a blood sample to determine the number of CAG repeats in the DNA. Individuals without HD typically have 28 or fewer CAG repeats. Patients with HD have 40 or more repeats. Some people feel that it is better not to know if they have HD because knowing for sure that they have the disease would add to the stress and make the course of the disease more difficult (Stoker et al., 2022) [4]. Patients at risk of developing the disease are tested before having children or starting a new job. In itself, HD is not fatal. However, complications from HD can lead to death. A 2018 study by M. Rakhimova examined the clinical and genetic characteristics of Huntington's disease in 21 patients (17 families) observed in six medical centers in Uzbekistan between 2009 and 2014. According to the results of the study, most patients had movement disorders, mental and cognitive problems. Genetic analysis showed an expansion of CAG repeats in the IT15 gene. G. Gayibova, S. Kuranbaeva, A. Umarov, S. Qalandarova In a study conducted by these researchers in 2022, the reasons for the late diagnosis of Huntington's disease were studied. The study involved 34 patients with molecular genetic confirmation. According to the results, the disease often begins with mental

disorders, which is why patients often turn to a neurologist or geneticist late. Also, genetic analyzes revealed alleles with incomplete penetrance and the phenomenon of "anticipation". Eldor Isroilovich Abdukodirov, Nodir Kodirovich Khaydarov, Rustam Jumanazarovich Matmurodov These scientists conducted scientific work on the study of the prevalence and epidemiological situation of hereditary nervous system diseases in the Republic of Uzbekistan. Their research is devoted to the clinical polymorphism and epidemiology of hereditary neurological diseases.

Conclusion: HD is a multifaceted, progressive, neurological disease that causes motor, cognitive and behavioral dysfunction and, as the disease progresses, death. Drugs such as tetrabenazine and deutetrabenazine, approved by the World Health Organization for the treatment of HD symptoms, have been developed, and significant work is underway in the Republic of Uzbekistan. Based on the above information, we can recommend that: All medical institutions in the Republic of Uzbekistan should distribute patients registered with HD to medical examination centers. Young people who are starting a family should be fully informed about the course of this disease and its consequences. This will allow us to prevent the widespread spread of the disease and its detection in severe stages.

References

1. Ayala-Pena, S. (2012). The role of oxidative DNA damage in mitochondrial dysfunction and the pathogenesis of Huntington's disease. P. 102-110.
2. Bhattacharyya, B.K. (2016). George Huntington and his disease 19(1), 25-28.
3. Bilal, H., Warren, N., Dahanayake, P., Kelso, V., Farrand, S., & Stout, J.C. (2022). The experience of depression in survivors of Huntington's disease: 1(3), 321-335.
4. Chen, I.W., Chen, C.M., Wu, Y.R., & Hua, M.S. (2017). Patterns of faulty memory in patients with Huntington's disease. 32(4), 391-400.
5. Costa, V., & Scorrano, L. (2012). Elucidating the role of mitochondria in the pathogenesis of Huntington's disease. EMBO Journal, 31(8), 1853-1864.