

Factors In the Development of Disability in Parkinson's Disease

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Abstract: This article researches origins, symptoms, stages of the Parkinson's disease. There have been explained impact of illness on different body systems and how it is manifested in different periods.

Keywords: neuron, dopamine, pathology, syndrome, depression

Parkinson's disease is an idiopathic, gradually developing neurodegenerative disease of the central nervous system. It is characterized by slow movements, muscle rigidity, and tremor (shaking) even in a calm state. The disease manifests itself due to the death of dopaminergic neurons in dopamine-producing areas of the brain. Parkinson's syndrome is one of the most common among older people (about 2% of cases among patients over 65 years of age). The disease affects men more often than women. In the general population, the prevalence is approximately 140 cases per 10 thousand people. The pathology is accompanied by the development of a number of mental disorders, a decrease in cognitive abilities and the progression of severe depression.

Other names for the disease: idiopathic syndrome, shaking palsy.

Main symptoms: tremors or shaking of the arms, legs, jaw or face, slow movements, difficulty starting an activity, muscle stiffness, difficulties with balance and coordination, deterioration in handwriting, asymmetrical movements, monotony in the voice, sleep disturbances (insomnia, nightmares).

Most often, the disease is sporadic, but in approximately 5% of cases there is also a family history - if one of the closest relatives has encountered the disease, the likelihood of its manifestation increases. In some cases, genetic mutations underlying the pathology have been identified. However, even in sporadic cases, heredity may play an important role. Predisposition can be realized under the influence of external, possibly toxic factors (for example, pesticides, herbicides, salts of heavy metals).

Young patients with this disease and a strong family history are more likely to be carriers of genes associated with Parkinson's disease and can pass them on.

Clinical studies show that more than 60% of people with early onset of the disease had a genetic mutation that presumably increases the likelihood of developing the pathology.

Thus, the following risk factors for Parkinson's disease can be identified:

- 1)Genetic predisposition.
- 2)Exposure to toxins. People who work with chemicals (pesticides, herbicides, mercury, heavy metals) have an increased risk of developing the disease.
- 3)Elderly age.
- 4)Brain damage.
- 5)Overweight, obesity, lifestyle (low physical activity, poor diet)
- 6)Immune system dysfunction. Some studies indicate a connection between the disease and weakened immunity.

The development of the disease is associated with the sequential death of nerve cells - neurons that produce dopamine in certain areas of the brain. The disease progresses slowly and gradually. First it manifests itself as tremors or clumsiness in one arm or leg, less often gait becomes difficult, and general stiffness in movements appears. At the onset of the disease, patients often feel pain in the back and limbs, and seizures.

Over time, symptoms become generalized, affecting other areas of the body. Slowness of movement—bradykinesia—progresses, the amplitude of movements decreases, and asynchrony in actions appears. Muscle tone increases, gait changes, and posture is disrupted. The patient is increasingly slouched, and his arms are characteristically bent at the elbows.

The speech of a patient with Parkinson's syndrome becomes monotonous and devoid of emotional coloring. The step is shortened, the arms remain motionless while walking.

At a later stage, a person loses postural reflexes, that is, his coordination of movements worsens. As a result, the patient often falls and loses balance, which is fraught with additional injuries. A phenomenon called paradoxical akinesia also develops - at this moment the legs seem to grow to the floor, the person freezes in place and cannot move.

Almost 50% of patients develop signs of depression - depression, apathy, loss of interest in life. A third of people have dementia. Concentration and memory decrease, reactions slow down. About a quarter of patients progress to psychotic disorders, such as visual hallucinations.

Parkinson's disease always progresses; it is impossible to stop this process. All patients have their own pace of disease development. In the later stages, the patient is completely unable to move and cannot care for himself without assistance.

Depending on the symptoms, several forms of the disease are distinguished.

Trembling. Among the manifestations, tremor of the upper and lower extremities predominates.

Akinetic-rigid. In this case, the trembling is minimally expressed, mainly signs such as imbalance, difficulty walking, and general slowness of movements are noted.

Mixed. It is also called the akinetic-rigid-tremor form. All typical signs of Parkinson's disease appear - tremors, instability, loss of balance and coordination of movements.

Stages:

First stage. Typical signs of the disease appear only on one limb.

Second stage. Symptoms become bilateral.

Third stage. Postural instability occurs, but the person can still move independently without assistance. A characteristic "suppliant pose" appears with a hunched back, in which the patient remains most of the time.

Fourth stage. Motor function becomes severely limited, range of motion decreases, and stiffness appears.

Fifth stage. The disease continues to progress. The patient is unable to move around, go to the toilet and take care of himself. As a rule, he is bedridden, has difficulty speaking and comprehending speech addressed to him.

Parkinson's disease can significantly impact a patient's quality of life. The disease causes many complications, which gradually lead to restrictions in everyday life.

Let's list the main complications that arise as a result of Parkinson's disease.

Motor. These include trembling, difficulty moving, instability, hypokinesia, and akinesia. One of the characteristic manifestations is dyskinesia - involuntary movements or twitching of body parts. Gradually, they cause difficulty in performing everyday tasks - dressing, eating, walking. In addition, over time, motor complications increase, which ultimately leads to disability.

Balance disorders. Patients often experience problems with the vestibular system, which leads to falls and injuries to the spine, joints, and skull. The consequences and severity of damage depend on the patient's age, health status and stage of Parkinson's disease.

Psychological complications - depression, anxiety, restlessness, panic, sleep problems.

Cognitive. Patients experience difficulties with memory, attention, concentration and other cognitive functions. This includes dementia - loss of memory, ability to think clearly and navigate in space. These manifestations inevitably affect professional and educational activities, relationships with others.

From the digestive system. Patients are concerned about digestive disorders, reminiscent of the symptoms of chronic gastritis. Constipation, diarrhea, bloating, and belching appear. Over time, these signs lead to a deterioration in the quality of nutrition and worsening symptoms of the disease.

From the genitourinary system. People with Parkinson's disease may experience problems with urination, urinary incontinence, and frequent urge to go to the toilet.

The last stage of Parkinson's disease has its own clinical features that affect not only the patient's quality of life, but also the nuances of his care. Often, due to the influence of external and internal factors, including incorrectly selected therapy or errors in patient care, a decompensatory breakdown develops. What kind of help is needed for decompensation, what kind of care is required in the last stage of Parkinson's, and what prospects does modern pharmacology open for increasing life expectancy in Parkinson's disease - the answers to these questions are important not only for the patient's loved ones, but also for her/himself.

The classic picture of Parkinson's includes hypokinesia, resting tremor, muscle rigidity, and postural instability. However, at the last stage, all these signs of parkinsonism do not manifest themselves in any way against the background of complete disability of the patient. The main symptoms of the last stage of Parkinson's: the patient is unable to stand up on his own, turn over in bed, or perform any hygienic procedures. Sometimes the formation of persistent muscle contractures and deformation of the joints, mainly of the feet and hands, occurs, which can be attributed to postural disorders.

Non-motor symptoms come to the fore, which include: autonomic dysfunction; cognitive disorders; development of dementia; sleep disorders; severe pain syndrome. Disturbances in the vegetative sphere include a fixed pulse, nocturia, enuresis, rapid or intermittent or difficult urination, bloating, constipation, drooling, delayed gastric emptying, impaired thermoregulation, weak or heavy sweating, thinning and marbling of the skin, seborrhea. Cognitive symptoms of Parkinson's disease at the last stage are represented by problems with thinking, memory, and attention. Psychotic symptoms develop: delusions, hallucinations, increased anxiety, aggressiveness, sleep disorders - nighttime insomnia and daytime drowsiness.

Dementia occurs in approximately 30% of Parkinson's patients. Pain syndrome can have different manifestations. The pain is usually aching in the muscles of the shoulder girdle, and painful cramps in the legs are characteristic. Against the background of muscle contractures and joint deformities, pain may appear in the corresponding areas.

Emergency conditions in late-stage Parkinson's. The relatively slow course of the disease in the last stage can be suddenly interrupted by a sharp deterioration in the condition. This may be due to: long-term therapy with dopaminergic drugs; severe autonomic dysfunction; psychotic disorders; sensory disturbances; complications caused by prolonged immobility of the patient.

Acute decompensation in Parkinson's. An emergency condition means a sharp increase in symptoms that persists for more than a day and is accompanied by a significant limitation of the patient's remaining capabilities, despite taking anti-Parkinsonian drugs. Decompensation, unlike the deterioration associated with short-term drug withdrawal, does not stop after resumption of therapy. Recent advances in the treatment of Parkinson's disease often make the process of decompensation reversible with timely consultation with a doctor. In 4-10%, death develops due to somatic complications (intestinal obstruction, rhabdomyolysis, aspiration pneumonia, etc.). Deterioration of the condition is provoked by drug withdrawal, infection, use of sedatives, intercurrent illnesses, dehydration, trauma, surgery, gastrointestinal diseases, metabolic disorders. Parkinson's decompensation, the last stage, includes autonomic, mental disorders, and the appearance of convulsive syndrome. A harbinger of a breakdown may be an increase in temperature to 38 degrees or higher without signs of infection.

Life expectancy in the last stage of Parkinson's How long do people live in the last stage of Parkinson's? Survival times for Parkinson's depend on the etiology of the disease and the rate of its development. Some forms of pathology can last for decades, others, especially in the absence of full-fledged therapy and rehabilitation, reach the final stage within several years, while others, after a difficult debut, do not receive further intensive development. Important! Parkinson's disease itself does not cause death. The cause of death is most often intercurrent diseases. The duration of the last stage depends on the quality of care and therapy, as well as on the general condition of the patient. However, according to clinical studies, the fifth stage occurs infrequently, since the patient dies much earlier from concomitant pathologies. The latest news in the treatment of Parkinson's disease talks about quite successful attempts to stop the progression of the disease in the early stages. Thus, scientists from Australia have already developed a drug that significantly slows down the death of neurons and smoothes out the consequences of neurodegeneration. Now the medicine has passed the first stage of clinical trials - in 70% of patients, a significant slowdown in the rate of disease progression was achieved and some lost skills were even returned, which was previously considered impossible. Another drug is being developed by a team of scientists from the United States, led by Ted Dawson. The action of the drug is based on slowing down the work of astrocytes, which in Parkinson's actively destroy neuronal connections, thereby accelerating the process of neurodegeneration.

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