

## Parkinson's Disease

### Introduction:

Parkinson's disease is a common disease in the elderly. Clinical symptoms usually begin between the ages of 40 to 60 with a higher incidence in later stages of life.

### Definition

Parkinson's disease is caused by damage to a certain part of the basal nucleus in the brain called the “black matter”, which is known to be responsible for the secretion of dopamine, a material necessary for the balance of movement in humans. No direct cause of the damage is known, but genetic and environmental factors may be involved.

### Causes:

The exact causes of this disease are not known, but there are several possibilities, including:

- Viral infections of the nervous system.
- Lack of dopamine, a chemical substance that transports nerve impulses.
- Atrophy and damage of the ends of neurons responsible for the secretion of a chemical called Norepinephrine, which is important in the transfer of nerve impulses, voluntary control of the nervous system and control of blood pressure.
- Exposure to toxic substances.
- Genetic predisposition.
- Previous head Injuries.
- Some drugs found to increase the risk of disease because they reduce the amount of dopamine or block its receptors, such as some drugs used to treat mental conditions.

### Risk Factors:

- Age: The risk of developing the disease increases with age and it rarely occurs in younger people.
- Genetics: Having one or more relatives with Parkinson's disease may increase the risk.
- Gender: Males are at higher risk than women.
- Exposure to toxins: Persistent exposure to toxic substances, such as pesticides and herbicides, may increase the risk of developing Parkinson's disease.

### Diagnosis:

There are no conclusive tests for Parkinson's disease making it difficult to diagnose, especially in its early stages. The diagnosis of Parkinson's disease depends on the patient's medical history, neurological examination as well as symptoms.

### Medical History:

The doctor examines the drugs the patient is taking and inspects whether the patient has a family history of Parkinson's disease.

### Neurological Examination:

This examination involves assessing walking, consistency of body movements and some simple hand movements.

### Symptoms:

- A tremor or shaking in the hand, leg, jaw or face.
- Rigid limbs or trunk.
- Slowed movement.
- Loss of balance when standing.

- Impaired walking or involuntary movements: Many of patients walk with a tendency to lean forward and their steps becomes short and irregular. Patients are likely to lose balance, because they can not move their muscles quickly to adjust or correct their posture.
- Speech changes: Patient may hesitate before talking and lose their usual ability to speak or to change the tone of their voice. Their speech gradually becomes soft and monotonic.
- Dementia: loss of mental function.
- Eye problems: Lack of dopamine affects all muscles, including eye muscles. Poor opening and closing of the eyelids may lead to dry eyes or conjunctivitis.

### Complications:

- Difficulty chewing and swallowing: Swallowing muscles are affected by the disease in later stages, causing difficulty swallowing. Swallowing may become slow and saliva may accumulate, increasing the risk of choking.
- Urination problems: People with Parkinson's disease develop incontinence or urinary retention. These complications may increase with the use of certain drugs for treatment.
- Defecation problems: Patients are at risk of developing hemorrhoids and constipation as a result of slowed bowel movements.
- Sleep disorders.
- Depression: Parkinson's patients usually get depressed because of the symptoms. Depression and anxiety may appear as side effects of the disease and some drugs.
- Erectile dysfunction: Some patients lose their sex drive as a result of a combination of psychological and physical factors.

### **Treatment:**

Parkinson's disease is a chronic disease that requires medication and psychosocial and educational support by the family in addition to physiotherapy and nutritional therapy. Patients also need a general plan to maintain their overall health.

### **Drugs:**

Drugs prescribed for Parkinson's patients do not limit the progression and development of the disease, but alleviate the symptoms. Note that not all patients are prescribed therapeutic drugs as treatment is sometimes postponed given the time-limited effectiveness of drugs. Most common drugs are: Levodopa and Parlodel.

### **Drug Side Effects:**

Drugs play an important role in helping to control the symptoms of Parkinson's disease, but like any other drugs, they have side effects that may increase when taken in combination with each other.

Therefore, it is advised to follow the patient well in order to identify and inform the doctor of any side effects when starting any new drugs.

### **Common Side Effects of Parkinson's Disease Drugs:**

- Nausea.
- Anorexia that often leads to weight loss.
- Edema (fluid retention in tissues).

### **Surgical Treatment: Electrostimulation Surgeries:**

Electrostimulation therapy for Parkinson's patients is called Deep Brain Stimulation (DBS). In this method, electrodes are implanted within the brain and connected to a small programmable electrical device called a pulse generator. This device may reduce the need for other drugs as well as the involuntary movements (hypokinesia), and also helps alleviating the fluctuations of symptoms and reduces tremors, slow movement and walking

problems. In general, surgical treatment is used in patients who show no response to drugs.

### **Physiotherapy:**

Maintaining physical therapy exercises is important in Parkinson's disease. This helps improve mobility and increases muscle strength. It can help counteract the progression of the disease, give patients a greater sense of confidence and improve their gait and balance.

### **Improving Lifestyle and Home Care:**

#### **Healthy Food:**

- A Parkinson's patient's diet should rely on whole grains, calcium-rich foods and small portions of high-protein foods to control constipation as well as to help control blood sugar, high blood pressure, cholesterol and heart disease.
- Patients should increase their intake of vegetables and fruits to get enough antioxidants, minerals and vitamins that nourish and support muscles, nerves and other organs. Calcium is especially important to maintain bone strength and prevent fractures, as is protein to protect and strengthen the muscles.
- Exercise.
- Maintain physiotherapy.
- Consult a speech trainer and perform exercises that help improve the speech and facial muscles.

**Be careful when walking and avoid falling:**

Parkinson's patients cannot walk in balance, and therefore should:

- Try not to move too fast.
- Hold feet on the floor when walking.
- Stop immediately, if they feel they are losing balance.
- Not carry objects or luggage as they walk to avoid falling.
- Avoid walking backwards to avoid falling.

**Clinical Health Education Department**

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