

Parkinson's disease

i. Carbidopa-levodopa

It is the natural chemical which passes into the central nervous system (CNS) and is usually changed into dopamine (Chaudhuri, Healy, et al., 2006). Levodopa is mostly combined with some elements of carbidopa to protect levodopa from premature conversion to the dopamine outside the victim's brain, that lessens and prevents the side effects like nausea as well as lightheadedness.

After some years, as Parkinson's disease progresses from one stage to another, levodopa benefits increasingly become less consistent with the tendency of wearing off (wane and wax). Additionally, the majority of the victims experience dyskinesia after taking several doses of levodopa. Your physician may adjust the doses' time or lessen the treatments to control and manage these effects.

ii. Dopamine agonists

Dopamine agonists, unlike the Carbidopa-levodopa, are not convertible into dopamine. However, it has similar effects of dopamine in the victim's central nervous system (Lees et al., 2009). Dopamine agonists are not usually effective and efficient as Carbidopa-levodopa in treating Parkinson's disease's symptoms. Dopamine agonists include ropinirole, rotigotine, and pramipexole. The side effects of Dopamine agonists include compulsive traits like eating, gambling, and hypersexuality, swelling hallucinations, and sleepiness.

iii. MAO-B inhibitors

MAO-B inhibitors drugs include rasagiline and selegiline. They assist in preventing the brain dopamine breakdown through the inhibition of the central nervous system monoamine oxidase B enzyme. This enzyme usually breaks down brain dopamine during metabolisms. Side effects of MAO-B inhibitors include headaches and nausea (De Lau & Breteller, 2006). When carbidopa-levodopa is combined with MAO-B inhibitors these types of treatment increase the hallucination problems.

iv. COMT inhibitors

Comta is the primary drug of treatment from this group; this type of therapy mildly prolongs the impact of Carbidopa-levodopa therapy through the inhibition of the enzymes that metabolize dopamine. Side effects of this type of medicine include dyskinesia, mainly result from the enhancement of the effects of levodopa.

v. Anticholinergics.

These type of treatment is usually used to control and manage symptoms of Parkinson's disease such as tremor. Example of the medication in this group includes Cogentin and trihexyphenidyl.

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- Surgical procedures

i. Deep brain stimulation (DBS).

In the DBS, neurosurgeons implant various electrodes into a particular part of the victim's central nervous system. The electrodes are usually connected to the generator which is embedded in the chest of the victim near the collarbone which sends electrical impulses to his or her central nervous system and may reduce the person's Parkinson's disease symptoms (Kerr et al., 2010). DBS is mostly provided to individuals whose Parkinson's has advanced up to stage 5, and they have inconsistent Carbidopa-levodopa treatment responses.

Living with Parkinson's disease

- Eating a balanced diet regularly to improve your health
- Keep yourself hydrated and take fiber to help reduce the symptoms of Parkinson's disease such as constipation.
- Regular physical therapy and exercises will help to enhance balance, mobility, strength, and flexibility.
- Consulting your doctor regularly on the type of food and medication you should take to reduce the symptoms of PD as well as the side effects of the drugs.

Conclusion

People living with Parkinson's disease (PD) need support and care that goes beyond just the control and management of the symptoms of the disease. Their treatment must always address emotional, social and physical needs. Therefore, because the majority of the victims are elder adults the caregivers and family members should establish smart home technologies in their areas of residence such as use remote patient monitoring methods like telehealth, telemonitoring, for example, the use of sensors fixed in their bedrooms, bathrooms, and kitchens to monitor their movement and behavior remotely when the physicians and caregivers are not near them.

References

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PARKINSON'S DISEASE

Name
Institution Affiliation

Introduction

Parkinson's disease (PD) is the neurological disorder which usually leads to the impairment of motor skills, speech as well as other functions of the central nervous system (CNS) (Weintraub, 2008). Parkinson's disease has no known cure. This disease affects more than 1.6 million people across the globe. The process of diagnosis is usually tricky more especially in the initial stages because the symptoms more often than not overlap with other neurological diseases. The initial symptoms of Parkinson's disease are generally dismissed since it is associated with aging.

Parkinson's disease affects the individuals differently in various ways as well as progress at distinct rates. Additionally, the condition is highly unpredictable, and it has common characteristics such as loss of speech, stiffness, and tremors

What are the causes of Parkinson's diseases?

While the cause of Parkinson's disease is unknown, researchers claim that the disease is caused by the combination of environmental and genetic factors (Lees, Hardy & Revesz, 2009). The ecological and genetic factor which have been identified by the researchers include the following:

(a) Gender

Men have high chances of developing Parkinson's disease

(b) Age

Young adult individuals have Parkinson's disease. It ordinarily starts in late or middle life, the Parkinson's disease risks increase with age. Individuals often develop at the age of 60 years or old

(c) Geographical region

Persons residing in rural areas seem to develop Parkinson's disease more often because they usually handle farming chemicals since they get exposed to pesticides and herbicides toxins.

(d) Ethnicity

Parkinson's disease develops up more often in the whites compared to other groups.

(e) Viral infections

(f) Toxic environment exposures

Exposure of individuals to the various environmental factors and toxins may increase the chances of contracting Parkinson's disease

Others may include:

(g) Street drugs (MPTP)

(h) Caffeine

(i) Cigarettes/nicotine

(j) Estrogen Deficiency

Symptoms of Parkinson's disease

- Motor-related symptoms

- (a) Rigidity.stiffness of the muscles usually occur in various body parts such the limbs. The stiff muscles in the legs and arms often limit a person's range of motion and may cause a lot of pain.
- (b) Postural instability. Involves problems with walking or standing, or coordination and balance impairment, which usually leads to falls.
- (c) Dystonia-this is usually associated with the involuntary movements accompanied by significant contraction of muscles in all the parts of the body, like a cramp.
- (d) Swallowing and speech problems. The person may develop various difficulties with swallowing as the Parkinson's disease progresses (Therathasan &Gregory, 2010). Usually, their accumulation of Saliva in the victims' mouth because slowed swallowing, resulting in drooling

- Non-movement related symptoms

- (a) Cognitive impairment. Involves the decrease in the person's ability to concentrate or multi-task and potential decrease in the intellectual performance and function leading to the start of psychosis.
- (b) Sleep disorders. This involves disorders such as REM sleep conditions, in which the persons act out unusually their dreams.
- (c) Mood changes. Include anxiety, apathy, and depression
- (d) Bladder problems. The sudden need to incontinence or urinate
- (e) Hyposmia. loss of the sense of smell
- (f) Constipation. Several persons who have Parkinson's disease develop a condition or illness, ordinarily because of the lower digestive tract.

- (g) Fatigue. Majority of the individuals who have Parkinson's disease usually experience fatigue due to loss of energy.
- (h) Orthostatic hypotension. It is usually associated with low blood pressure when the individual stands.
- (i) Pain. Central pain which is not caused by dystonia or posture problems.

- Treatment-related symptoms

- (a) Inability to resist some impulses. Involves the failure of the people who have Parkinson's disease to impulses that harm their health that usually result from the consumption of medicines that treat the disease.
- (b) Dyskinesia .this is involuntary, turning or twisting as the jerky movements due to long-term consumption of drugs which treat Parkinson's disease.

Stages of Parkinson's disease

Stage 01	This where symptoms occur one side of the body only.
Stage 02	This involves the occurrence of the symptoms on both sides of the body but without coordination and balance impairment.
Stage 03	This stage is characterized by mild to the moderate sickness that is associated with physical independent as well as postural instability.
Stage 04	Characterized by very severe sickness but able to stand or walk unassisted
Stage 05	Bedridden or wheelchair bound

Available Treatment for Parkinson's disease

- Dopaminergic Approaches

Medications and taking of drugs can assist a person suffering from the illness to challenges of movement tremor, and walking by increasing the dopamine supply to the brain. After starting the treatment of Parkinson's disease, the individual may experience significant improvement of the disease's symptoms (Aarsland, Bronnic, et al., 2007). However, after some time the dopamine benefits may invariably start to diminish and increasingly become less effective, although signs of Parkinson's disease can always be reasonably controlled. Your doctor or physician may prescribe drugs or medications, which include: