

Current Treatments for Parkinson's Disease

In the brain, there is a group of specialised cells that produce a chemical called dopamine which is necessary for smooth co-ordinated movement. When these specialised cells degenerate or die prematurely, the chemical dopamine is reduced, leading to the symptoms of Parkinson's. Most drugs for Parkinson's attempt to replace the missing dopamine, or to provide an agent that works in a similar fashion, or to support the remaining dopamine producing cells.

Every patient is different, so treatment is tailored to the individual and may differ from patient to patient. Sometimes no treatment is necessary, at least in the early stages, or a variety of drugs may be required, which needs adjustment occasionally to get the best response.

The following is a list of the most commonly used drugs in the management of Parkinson's disease.

Levodopa is the most effective drug for controlling the symptoms of Parkinson's.

Levodopa is converted to dopamine in the brain, replacing the missing chemical and relieving the symptoms..It comes in two main forms:-

Drugs commonly used for PD

Levodopa
(*Madopar, Sinemet*)
COMT Inhibitor (*Comtess*)
MAOB Inhibitor (*Eldepryl*)
Dopamine Agonists (See below)
Apomorphine (*Britaject*)
Anthcholinergics (*Artane, Cogentin*)
Amantadine (*Symmetrel*)



1. *Sinemet* (levodopa combined with carbidopa) and
2. *Madopar* (levodopa combined with benserazide).

Each of these comes in many different strengths and formats.

It is important to remember that for some patients levodopa medication is best taken 1-2 hours before main meals, as protein intake can reduce levodopa absorption.

Although Levodopa is the most effective drug, there is an increasing consensus that it should only be used when the symptoms are sufficiently severe to warrant it, as there may be long-term complications.

COMT inhibitor: Entacapone (*Comtess*) works by blocking an enzyme called COMT, which breaks down levodopa. This means that more levodopa can enter the brain and improve symptoms. Entacapone must be taken at the same time as each dose of levodopa, and will make each dose last longer. Potential side effects include worsening of dyskinesias (which can usually be managed by reducing levodopa) and diarrhoea.

MAOB Inhibitor: Selegiline (*Eldepryl*) works by interfering with one of the enzymes that breaks down dopamine in the brain, and thus prolongs and enhances the effect of the remaining dopamine. It delays the need to introduce levodopa and also the development of some long-term complications associated with treatment. Eldepryl is usually taken in the morning, as sleep disturbances may occur.

Dopamine agonists: The four main dopamine agonists are bromocriptine (*Parlodel*), pergolide (*Celance*), pramipexole (*Mirapexin*) and ropinirole (*Requip*). These are synthetic compounds that mimic the action of dopamine in the brain. Some of these agents can be used to delay levodopa treatment or they may be added later to improve responses to levodopa treatment. Their main side effects are nausea, nightmares and hallucinations.

Apomorphine is an injectable form of a dopamine agonist. Some patients find it extremely useful as an instant cure when frozen, e.g. when out shopping.

Driving and Medication

Driving is particularly important for any with limited mobility and patients with Parkinson's worry about their ability to continue driving. Some medications may cause unexpected sleepiness, which makes driving dangerous, and if patients are on a number of drugs the combination may cause drowsiness. You should consult your doctor if you have any concerns, and you should always listen to your partner's views. If a concern is expressed about an individual's ability to drive, this may be best resolved by being referred to the Irish Wheelchair Association, which can arrange an assessment.

Anticholinergics (such as **Artane** and **Cogentin**) may help tremor. Possible side effects include: dry mouth, blurred vision, constipation, difficulty with passing water and confusion.

Amantadine (*Symmetrel*) promotes the release of dopamine and allows it to stay longer at its site of action. It may sometimes help to reduce dyskinesias. It has only a mild effect.

Surgery

In special cases, when the disease is at a more advanced stage, and symptoms become more problematic, surgery may be considered. The most commonly performed procedures are:

1. Thalamotomy – involves making a lesion in a part of the thalamus (see diagram of brain on sheet entitled “Frequently Asked Questions about Parkinson’s Disease”). The target site is located using computer technology.
2. Pallidotomy – part of the globus pallidus, situated in the brain, is destroyed. Both procedures have a beneficial effect on some of the symptoms of Parkinson’s Disease.
3. Deep brain stimulation – a pacemaker is inserted into the globus pallidus or other structure, and stimulates the area electronically at a very fast rate which alleviates some of the symptoms of Parkinson’s Disease. The stimulator is powered by a battery which is implanted under the skin on the chest wall (similar to a cardiac pacemaker), and the patient switches it on or off according to symptoms being experienced.

Note- These procedures are not currently performed in Ireland, though some Irish patients have been treated in Europe and the US.)

Other Treatments

Your Doctor may refer you to skilled therapists who can help enormously to improve your quality of life: occupational therapists, physiotherapists, speech and language therapists, dieticians and social workers. In most units these therapists work closely together to ease problems that may crop up. Don't be afraid to request a referral to one of them if you think that you need their help or advice. However, they are sometimes in short supply and not all hospitals are able to provide these services.

What can I do to help myself?

- Read all you can about Parkinson’s disease. Be informed and keep updated.
- Learn the terms your doctor uses (“dyskinesias”, “on”, “off”, etc.) so that you can be as well informed as possible.
- Report the effects of treatment, good or bad, to your GP/Hospital doctor – make notes in advance of your appointment. Keep a brief diary when starting a new drug or adjusting the dosing.
- Don’t be afraid to ask questions.
- Join the Parkinson’s Association (phone – 1800 359359) or PALS (phone – 01 8510040) and attend the meetings.
- Eat well – see sheet entitled “Nutrition and Parkinson’s Disease”.
- Keep fit – see sheet entitled “Exercise and Parkinson’s Disease”. Consult your doctor or physiotherapist for suitable classes
- Try to keep socially active.

For full information on these treatments or other matters covered in this leaflet please consult your doctor.

(The information contained on this leaflet represents the views of the author and not necessarily those of the sponsor)