



Infusion Therapies for Parkinson's Disease: Essential Facts for Patients

WHAT IS THE ROLE OF MEDICATION IN PARKINSON'S DISEASE?

Patients with PD do not have enough of the chemical dopamine in the brain. Medication can help PD symptoms. Most medicines are taken by mouth several times each day. When you first start taking your PD medicines, the benefits usually last throughout the whole day; however, as PD progresses, you may notice that the medicine's benefits don't last to the next dose. This is called "wearing off." When "OFF", PD symptoms such as tremor, slowness and difficulty walking may come back. When the medicine kicks back in, "ON", the symptoms improve. This results in taking medicine more frequently and having less control over your symptoms.

WHAT ARE INFUSION THERAPIES FOR PD?

Infusion therapies are treatments either through a small needle inserted under the skin or through a tube (catheter) inserted into your small intestine. These provide continuous flow of drugs throughout the day. Levodopa and apomorphine are two common infusion therapy drugs that address the lack of dopamine in the brain.

- **Levodopa:** This drug is transformed into dopamine in the brain. This is the most commonly used pill for PD, and now it can be infused into the intestine as a gel called levodopa/carbidopa intestinal gel (LCIG) to reduce OFF periods.
- **Apomorphine:** This drug, a dopamine agonist, acts on brain cells like dopamine does. It is infused under the skin either as a single injection or continuous infusion. It helps reduce OFF periods.

Both LCIG and apomorphine are stored in an external portable pump that is connected to a tube. The LCIG pump tube is connected to a tube that delivers levodopa into the intestine. The apomorphine pump tube is attached to a thin needle inserted under the skin with an adhesive to keep it in place.

WHY USE INFUSION THERAPIES?

When you suffer from "wearing off", your brain cells don't absorb levodopa and store dopamine as well. As a result, you can't control your symptoms and you need to take the drug more often during the day. Infusion therapy delivers medication more continuously and provides more consistent and reliable symptom relief. Infusion therapy also reduces the need to take oral medication so many times throughout the day. Infusion therapies are usually more effective than long-acting PD pills and patches.

WHO SHOULD CONSIDER THIS TREATMENT?

Infusion therapies are recommended if oral medication helps you but you have developed "wearing off" and/or dyskinesias (involuntary movements that happen with too much medication). Most patients have usually tried a few different oral and/or patch medications before deciding to start infusion therapies.

It is important to note that if oral medications do not improve your symptoms, even for a short time, infusion therapies are not recommended.

WHERE ARE TREATMENTS GIVEN?

Patients generally start infusion therapy either in a hospital or sometimes at an outpatient clinic. With LCIG, a doctor inserts the catheter into your intestine and starts the drug. With apomorphine, you may be admitted to the hospital for a few days for a trial or the trial is done as an outpatient. Infusion therapies usually begin in the morning and end at night time. During the first few months, a doctor or nurse helps adjust your dose.

WHAT ARE THE MAIN LIMITATIONS AND COMPLICATIONS OF INFUSION THERAPIES?

- Infusion therapies are not available worldwide; only some countries have these treatments.
- The cost of infusion therapies is higher than pills and patches, which limits their availability.
- Managing infusion therapies requires caregiver availability, training and support.
- Technical problems can happen with the LCIG catheter when it is inserted.
- Skin reactions can complicate apomorphine treatment.

LCIG and apomorphine have similar side effects to other PD medications, such as:

- Nausea
- Sleepiness
- Low blood pressure
- Confusion
- Hallucinations

These symptoms occur especially if there have been problems with other treatments.