

## **HOW LARGE IS THE ADVANCED SPACE OF PD, WHEN DOES IT REALLY START IN PD?**

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Motor fluctuations and dyskinesia are common and meanly controlled symptoms of advanced Parkinson's disease by current oral medications. Gender, the age of the patient, disease duration and severity and the administered amount of L-dopa are among the risk factors. Continuous dopaminergic drug delivery through continuous duodenal L-dopa or subcutaneous apomorphine infusions can be beneficial to control motor complications. Apomorphine subcutaneous infusion determines a similar motor benefit to dopamine with a comparatively ease of use in advanced PD although it requires concomitant administration of L-dopa & its long term usage may lead to compliance problems. Even though continuous administration of L-dopa/carbidopa infusion in the jejunum requires a complex procedure with a gastrostomy for the placement of the infusion tube, it leads to reduce the severity of motor complications with a satisfactory therapeutic response. The evidence of these effective procedures is limited to small case series. Randomized blinded studies are needed especially in case of apomorphine. Moreover, it is poorly stated to identify the most suitable patients for these procedures since the reported patients are clinically heterogeneous. As a result, the DBS, apomorphine infusion and duodopa infusion therapies are powerful strategies for advanced patients with motor complications but the side effects, invasiveness and the cost are the main limitations of use in clinical practice. There is no evidence showing that each advanced strategy for early use where oral medications can effectively control motor and nonmotor features of the disease.