

# Opicapone and Levodopa-Carbidopa intestinal gel infusion: cost savings analysis in the United Kingdom

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## Objective

To investigate whether the use of Opicapone as an add-on therapy to Levodopa-Carbidopa intestinal gel (LCIG) infusion in advanced Parkinson's disease (PD) reduces the LCIG daily dose and potentially the costs associated with this therapy.

## Background

- LCIG therapy is associated with high costs of care as described by NICE in the UK [1].
- Currently, about 10% of PD patients on LCIG infusion require two cassettes per day [1].
- The recently licensed COMT-inhibitor Opicapone offers an unexplored and potentially powerful way of reducing LCIG daily dose by increasing the efficacy of this therapy with possible cost savings.

## Methods

- In this observational report of clinical pathway at King's College Hospital (London) PD patients who were on LCIG infusion with subsequent addition of Opicapone 50mg/day have been included.
- Patients were assessed before and 3 months after Opicapone introduction and the following data were recorded: Demographics, Levodopa equivalent daily dose (LEDD), Parkinson's KinetiGraph (PKG) bradykinesia and dyskinesia scores.
- The **primary outcome** of this study was to assess the reduction of LCIG daily dose and the potential reduction of LCIG-associated costs after the introduction of Opicapone.
- The **secondary outcomes** of this study were:
  - Changes in the PKG bradykinesia and dyskinesia scores
  - Tolerability
- Data were summarised descriptively (median (interquartile range) or percentage) and differences pre- to post- Opicapone were tested with the Wilcoxon signed-rank test ( $p \leq 0.05$  was considered significant).

## Results

### Primary outcome

- After the introduction of Opicapone in 12 PD patients, LCIG daily dose was reduced by 24.2% (Table 1).
- Cost analysis was based on the following numbers: On 01/09/2019 in the UK a) 335 PD patients were on LCIG infusion; b) Of these 335 patients, 23 patients used more than one cassette per day (average LCIG daily dose 113.8 ml); c) The cost of one cassette of LCIG was £77.00 daily [2] d) the costs for Opicapone 50mg was £3.13 daily [3].
- The annual costs associated with LCIG in the UK was £10,223,165. Given the reduction of 24.2% of LCIG daily dose after the introduction of Opicapone in our cohort, the 23 patients in the UK on more than one cassette would now go to one cassette. This would result in net savings of £142,821 per year (1.4% reduction in annual costs for LCIG) (Figure 1).
- Considering that 50% of patients on LCIG infusion in our cohort after the introduction of Opicapone used 50 mL or less of LCIG a day, these patients would potentially no longer require one cassette a day, but instead could manage with half a cassette. Extrapolated to the entire UK cohort of LCIG patients, this would imply that 162 (48.4%) of them could go to half a cassette of LCIG per day. This would amount to net savings of £2,095,523 per year (20.4% cost savings compared to the current situation) (Figure 1).

### Secondary outcomes

- No significant changes were observed in the PKG bradykinesia and dyskinesia scores.
- Three out of 12 PD patients stopped Opicapone due to the development of side effects (hallucinations or dizziness) or inefficacy.

Table 1

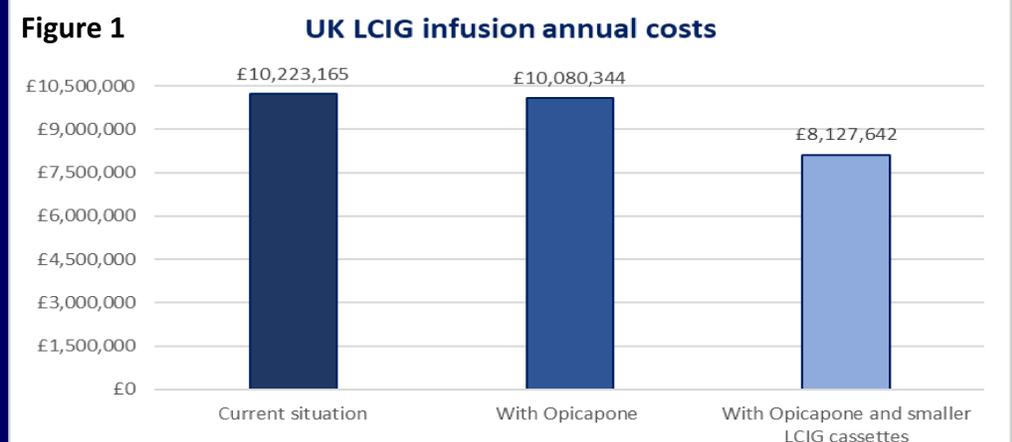
Demographics			
Age (years)	65.7 (59.6-72.4)		
Disease duration (years)	17.5 (15.3-18.7)		
Gender (M/F; %)	8/4 (60.0/40.0)		
Outcome measures	Pre-Opicapone	Post-Opicapone	P
LCIG infusion dose (mL/day)	72.6 (48.5-88.5)	55.0 (44.3-78.8)	0.05
LEDD (mg)	1854.1 (1248.3-2571.0)	2657.3 (1950.9-3562.0)	0.01
Bradykinesia PKG score	23.3 (16.6-30.5)	24.4 (14.4-29.6)	0.61
Dyskinesia PKG score	2.8 (1.1-8.7)	3.3 (1.0-17.1)	0.53

### References:

1. Lowin J, Sail K, Baj R, Jalundhwa YJ, Marshall TS, Konwea H, Chaudhuri KR. The cost-effectiveness of levodopa/carbidopa intestinal gel compared to standard care in advanced Parkinson's disease. *J Med Econ.* 2017 Nov;20(11):1207-1215. 2. Royal Pharmaceutical Society, Duodopa, in British National Formulary 65. 2013, BMJ and Pharmaceutical Press: London, p.315. 3. [www.nice.org.uk/advice/es9/chapter/estimated-impact-for-the-nhs](http://www.nice.org.uk/advice/es9/chapter/estimated-impact-for-the-nhs).

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Figure 1



## Conclusions

The addition of Opicapone to LCIG infusion resulted in a median 24% reduction of LCIG daily dose and potential cost savings of £142,821 per annum (or £2,095,523 if half cassettes can be used). Clinically the introduction of Opicapone did not result in worsening of dyskinesia. Future use of this combination therapy could be considered from a both clinical and cost savings perspective.