EE710

Cost-Effectiveness of Foslevodopa/Foscarbidopa for the Treatment of Advanced Parkinson's Disease With Severe Motor Fluctuations and Hyperkinesia or Dyskinesia in Greece

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OBJECTIVE

To estimate the cost-effectiveness of foslevodopa/foscarbidopa (LDp/CDp), a 24-hour continuous subcutaneous infusion of levodopa-based therapy, compared to levodopa/carbidopa intestinal gel (LCIG), the most utilized device-aided therapy for the treatment of advanced Parkinson's disease (PD) with severe motor fluctuations and hyperkinesia or dyskinesia in Greece

CONCLUSIONS

LDp/CDp was found to be a cost-effective treatment option versus LCIG for patients with advanced PD with severe motor fluctuations and hyperkinesia or dyskinesia in Greece

The present cost-effectiveness findings demonstrate the potential of LDp/CDp as a promising treatment option in advanced PD, where despite the currently available treatments, a large unmet need still exists

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Papageorgiou G, Yan CH and Boodhna T are employees of AbbVie. All authors declare no other competing interests.

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INTRODUCTION

- Parkinson's disease (PD) is an incurable, chronic, progressive, neurological condition, characterized by the loss of dopaminergic neurons in the substantia nigra and other brain regions[1]
- PD is the most prevalent movement disorder and the second most common neurodegenerative disorder worldwide, associated with significant burden[1-7]
- Approximately 10 to 20% of people do not achieve satisfactory symptom control with oral treatment, indicating their disease has progressed to advanced PD[8]
- There is an unmet need for a sustainable, safe, and effective treatment for advanced PD that does not require a complex invasive procedure (i.e., LCIG, DBS)[9,10]
- Foslevodopa/foscarbidopa (LDp/CDp) is a 24-hour, non-surgical, subcutaneous levodopa infusion, positioned for use in patients with advanced PD[11]

METHODS

- A state-transition Markov model, with 17-health states and one absorbing state (death), was locally adapted for a Greek payer perspective over a lifetime horizon. The model defines health states for each treatment according to 'OFF' time, ranging from 0 to 16 hours, in one-hour increments
- The clinical efficacy inputs for LDp/CDp were derived from the pivotal randomized control M15-736 trial (NCT04380142)[12], whereas efficacy for LCIG was modelled using inputs derived from a network meta-analysis[13]
- Safety, discontinuation, and health-related quality-of-life data were extracted from the LDp/CDp clinical trial and literature[12-15]
- Drug acquisition, administration, monitoring, disease management, and adverse event costs (€2024) were considered in the analysis[15-18]

RESULTS

Table 1. Base case deterministic cost-effectiveness results

Therapy	Lifetime Total costs[a]	Lifetime Total QALYs	LDp/CDp versus LCIG		
			Incremental costs	Incremental QALYs	ICER (Cost per QALY gained)
LDp/CDp	€ 494,865	5.849	-	-	-
LCIG	€ 543,911	5.740	- € 49,046	0.109	Dominant

Notes: [a] Total costs include drug acquisition, administration, monitoring, disease management, and adverse event costs.
Abbreviations: ICER, Incremental cost- effectiveness ratio; QALY, Quality Adjusted Life Year; LDp/CDp, foslevodopa/foscarbidopa; LCIG, levodopa-carbidopa intestinal gel; Dominant, improve outcomes with reduced costs.

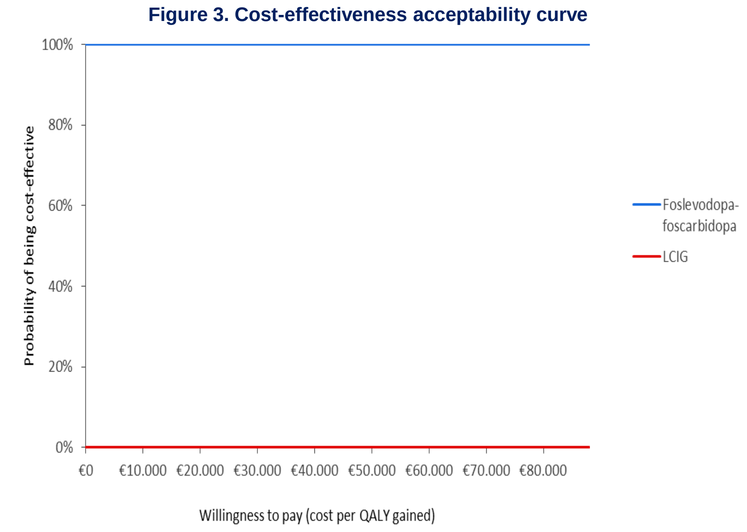
Table 2. Base case probabilistic cost-effectiveness results

Therapy	Lifetime Total costs[a] [mean (95% CI)]	Lifetime Total QALYs [mean (95% CI)]	LDp/CDp versus LCIG		
			Incremental costs	Incremental QALYs	ICER (Cost per QALY gained)
LDp/CDp	€ 529,020 (€473,930, €589,412)	5.793 (5.558, 6.030)	-	-	-
LCIG	€ 583,342 (€522,891, €663,852)	5.673 (5.423, 5.907)	- € 54,322	0.120	Dominant

Notes: [a] Total costs include drug acquisition, administration, monitoring, disease management, and adverse event costs.
Abbreviations: CI, confidence interval; ICER, Incremental cost- effectiveness ratio; QALY, Quality Adjusted Life Year; LDp/CDp, foslevodopa/foscarbidopa; LCIG, levodopa-carbidopa intestinal gel; Dominant, improve outcomes with reduced costs.

- LDp/CDp provides improved QoL and costs-savings (dominant), allowing for a non-invasive and affordable treatment option to meet the persisting high unmet needs for people with advanced PD (Table 1 & 2)
- One-way sensitivity and scenario analyses confirmed the cost-effectiveness of LDp/CDp. Efficacy and discontinuation rates for LCIG and LDp/CDp were key drivers for costs and QALYs (Figure 1 & 2)
- LDp/CDp therapy was associated with 100% probability of being cost effective compared to LCIG, across all cost-effectiveness thresholds examined (Figure 3)[19]

Figure 3. Cost-effectiveness acceptability curve



Deterministic one-way sensitivity analysis of LDp/CDp versus LCIG

Figure 1. Tornado diagram - 15 Most Influential Parameters on the incremental costs of LDp/CDp versus LCIG

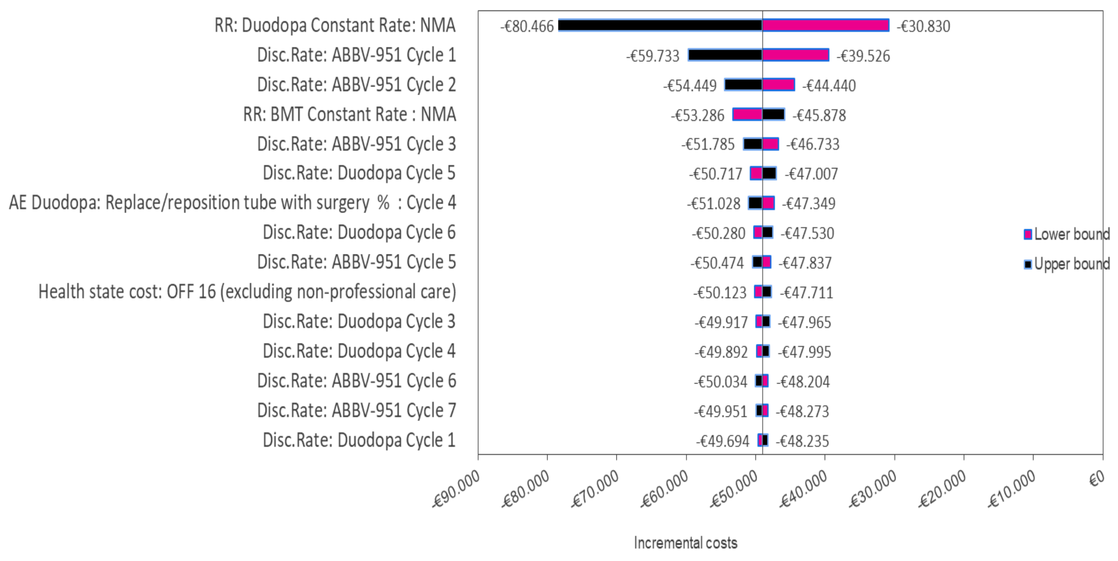
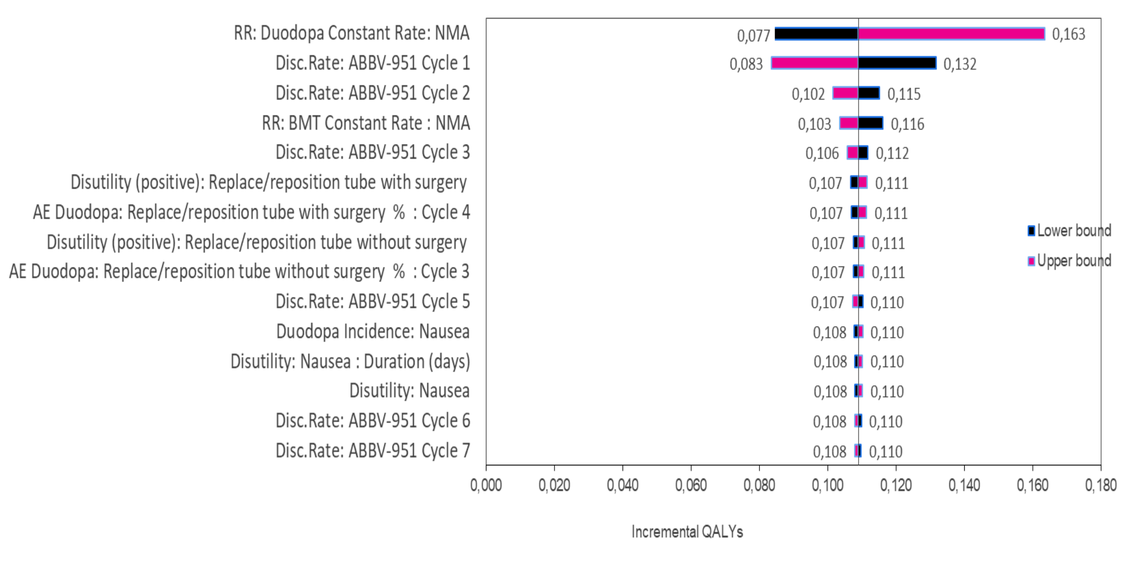


Figure 2. Tornado diagram - 15 Most Influential Parameters on the incremental QALYs of LDp/CDp versus LCIG



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