BACKGROUND

Parkinson's disease (PD) is a progressive neurodegenerative disorder that affects the motor and non-motor symptoms. The severity of PD symptoms may vary and includes a range of motor symptoms that inevitably increase over time. Levodopa (LCIG) is a highly effective medication for PD patients in Ireland. Levodopa/Carnitine intestinal gel (LCIG) is indicated for the treatment of advanced Parkinson's disease in patients who are not eligible for treatment with LCIG, that is, approximately 1% of all PD patients. The primary symptoms of PD are motor fluctuations and dyskinesias, which are commonly used in clinical practice to evaluate patients' disease progression. There are no published studies reporting the economic impact of LCIG in advanced Parkinson's disease (APD) in Ireland.

METHODS

CLINICAL INPUTS

LCIG treatment effect

The treatment effect of LCIG was modelled based on its initial treatment effect (effectiveness on improving H&Y stage and OFF state in the key driver analysis and OWSA). The LCIG treatment effect of 0.074 (OFF II → OFF III) was derived from a meta-analysis of all available published studies of LCIG treatment for advanced PD. The LCIG treatment effect of 0.043 (OFF III → OFF IV) was derived from a meta-analysis of all available published studies of LCIG treatment for advanced PD.

CLINICAL PLAN

In the clinical plan, patients were allocated to the LCIG arm if they met the following criteria: (1) patients who have progressed to the advanced stage of the disease; (2) those who have motor fluctuations and dyskinesias when available combinations of medications are contraindicated; and (3) those who have started treatment with LCIG after the ON period is when the treatment is working and the patient experiences an improvement in their symptoms. Motor fluctuations and dyskinesias occur in a large proportion of APD patients. Only the patients who met the eligibility criteria were considered in the model. The primary endpoints of the model were the total health care costs and the QALYs gained for LCIG and SoC.

OBJECTIVES

The objective of LCIG treatment is to improve the health status of patients with advanced PD in Ireland. The key clinical endpoints are the health state transition probabilities, which are used to estimate the cost-effectiveness of LCIG relative to SoC. The study aims to estimate the incremental cost-effectiveness ratio (ICER) of LCIG relative to SoC, which is defined as the difference between the costs and effectiveness of LCIG and SoC per QALY gained. The study also aims to estimate the incremental cost-effectiveness ratio (ICER) of LCIG relative to SoC, which is defined as the difference between the costs and effectiveness of LCIG and SoC per QALY gained.

RESULTS

The results of the base-case analysis can be seen in Table 4. The ICER is below the willingness to pay (WTP) threshold in Ireland of €300,000/QALY. The tornado diagram from OWSA is shown in Figure 2. The drivers of the incremental cost-effectiveness of LCIG are: (1) the cost of LCIG medication; (2) the cost of SoC; (3) the care management costs; and (4) the effectiveness of LCIG.

CONCLUSION

The result of the base-case analysis can be seen in Table 4. The ICER is below the willingness to pay (WTP) threshold in Ireland of €300,000/QALY. The tornado diagram from OWSA is shown in Figure 2. The drivers of the incremental cost-effectiveness of LCIG are: (1) the cost of LCIG medication; (2) the cost of SoC; (3) the care management costs; and (4) the effectiveness of LCIG.

REFERENCES


Acknowledgments and Disclosures

AstraZeneca Ireland provided funding to support the timeliness and quality of the study. The authors are solely responsible for the content and conclusions of this study. The authors declare no conflict of interest.

Cost-effectiveness of levodopa/carnitine intestinal gel in Ireland

Rahil Baf (AbbVie Ireland) | John McCarthy (AbbVie W.E.B.C) | Karine Egan (AbbVie Ireland)

Presented at the International Society of Pharmacoeconomics and Outcomes Research (ISPOR), Philadelphia, US, May 16-20, 2015