EE658

Cost-Consequences of Cladribine Tablets for the Treatment of Highly Active Relapsing-Remitting Multiple Sclerosis in the UK

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CONCLUSIONS

- **Cladribine tablets enable patients to spend more time in a non-relapsing phase compared with other oral and subcutaneous/infused DMTs**
- **Cladribine tablets may offer substantial cost savings and improved treatment outcomes compared with other oral and subcutaneous/infused DMTs**
- **Treatment with cladribine tablets resulted in cost reductions between 100% and 206% over 8 years compared with other oral and subcutaneous/infused DMTs**
- **When results are extrapolated to the population of patients with HA-RRMS in the UK, substantial savings for the NHS could be expected**

INTRODUCTION

- Multiple sclerosis (MS) is a chronic autoimmune disorder that affects the central nervous system. Patients with relapsing-remitting MS (RRMS) experience relapses that can last for ≥24 hours and are followed by periods of remission when the symptoms partially or completely subside
- Patients with highly active RRMS (HA-RRMS) are defined as those who experience frequent relapses and exhibit high counts of T2 lesions and gadolinium-enhancing lesions
- Relapses impact disease development and worsening, patient daily functioning and quality of life, and can induce costs to the healthcare system
- Following regulatory approval by the European Medicines Agency, cladribine tablets have been available in the UK for the treatment of HA-RRMS since 2017[1,2]
- A growing body of evidence of the use of cladribine tablets in clinical practice is available with recently published data from the GLIMPSE MSBase study[3]
  - GLIMPSE MSBase is a retrospective analysis of MSBase registry data, comparing real-world treatment outcomes, including annualised relapse rates (ARR), in patients with MS treated with cladribine tablets or other oral disease-modifying therapies (DMTs)
- There is a need for more data on real-world cost impact of using cladribine tablets in patients with HA-RRMS

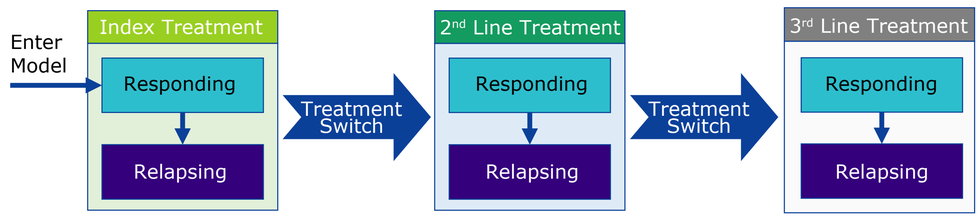
OBJECTIVES

To evaluate and quantify the cost-consequences of using cladribine tablets in patients with HA-RRMS in comparison with other oral and subcutaneous/infused DMTs in the UK, using effectiveness data from GLIMPSE MSBase

METHODS

- A model was designed to capture, estimate and quantify the economic value of using cladribine tablets vs oral (fingolimod, ponesimod) and infusion/subcutaneous (sc) (ocrelizumab, ofatumumab, natalizumab) DMTs recommended for treatment of HA-RRMS accommodating for different treatment dosing and administration schedules (**Figure 1**)
- Real-word evidence (RWE) on effectiveness (ARR, time to relapse, switch rates) supplemented with data from pivotal clinical trials on safety (serious adverse event [SAE] rates[4-6]) was used in the model; for natalizumab, GLIMPSE Infusion data was used (data on file), for ponesimod, fingolimod RWE data was used as proxy and for ofatumumab, ocrelizumab RWE data was used as proxy
- Direct and indirect medical costs were sourced from published national tariffs and literature[7-9]
- The model simulated 3 subsequent lines of treatment and costs were estimated in 4- and 8-year time horizons to capture the long-term economic impact of different therapies
- Treatment discontinuation and transitions to relapsing stages were used as proxies to indicate occurrence of disease progression

Figure 1. Model structure

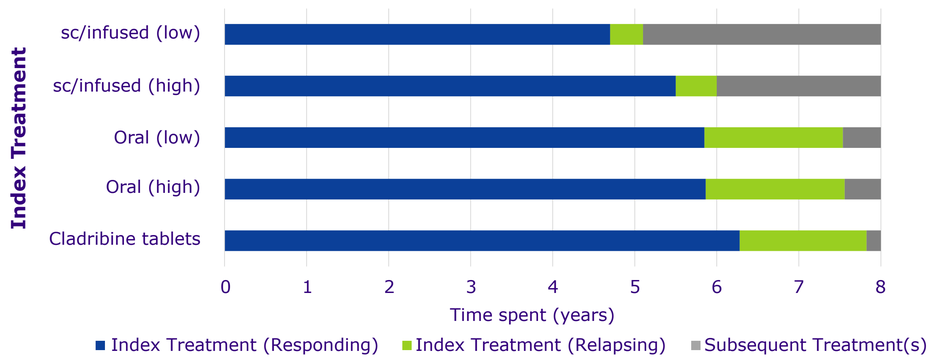


- Patients treated with cladribine tablets were assumed not to receive any dose beyond year 4[9]
- Cost of relapse included both direct (inpatient care, day admission, consultation, tests) and indirect (community services, informal care, short-term absence and long-term sick leave) medical costs and were set at £460 and £486, respectively[10]

RESULTS

- Only 8-year time horizon results are presented in this poster; however, the 4-year results were analysed and retained the same trend (**Figure 2**)

Figure 2. Allocation of patient time by index treatment option: 8-year time horizon

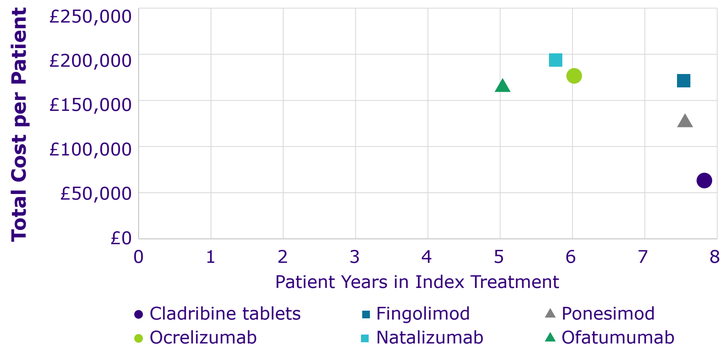


'Low' and 'high' indicate the upper and lower range of the results for the oral DMTs (fingolimod and ponesimod) and sc/infused DMTs (ocrelizumab, natalizumab and ofatumumab)

Using RWE for assessing consequences and costs of treating patients with HA-RRMS with cladribine tablets complements and confirms published economic evidence from cost-effectiveness, cost-minimisation and budget impact analyses and efficiency model outcomes. The current model may provide additional insights into the clinical and economic impact of using different therapies for the treatment of patients with HA-RRMS in a real-world clinical setting in the UK[10-13]

- Patients who received cladribine tablets as their index treatment did not receive subsequent treatment for 7.8 years of the 8-year time horizon. This exceeded all other comparator treatments in both time spent on the index treatment overall and in the responding stage of the index treatment (**Figure 3**)

Figure 3. Economic and clinical treatment comparison: 8-year time horizon



- The analyses results indicate that savings from using cladribine tablets treatment in patients with HA-RRMS range from £62,798 to £108,150 vs oral DMTs and from £98,878 to £129,956 vs sc/infused DMTs per patient, over an 8-year time horizon

Table 1. Incremental model results comparing cladribine tablets to oral and sc/infused DMTs

	CladT vs oral (high)	CladT vs oral (low)	CladT vs sc/ infused (high)	CladT vs sc/ infused (low)
8-year time horizon				
Total cost reduction (%)	172	100	206	157
Cost savings per additional year in the responding stage of index treatment (£)	-261,429	-146,325	-140,383	-60,794

Note: Negative cost values indicate cost savings for cladribine tablets vs the comparator.
'Low' and 'high' indicate the upper and lower range of the results for the oral DMTs (fingolimod and ponesimod) and sc/infused DMTs (ocrelizumab, natalizumab and ofatumumab)
CladT, cladribine tablets; **DMT,** disease-modifying therapy; **sc**, subcutaneous

Model limitations

- In the absence of ponesimod and ofatumumab specific values from the GLIMPSE study, fingolimod and ocrelizumab values were used as proxies, respectively
- Disease progression was not modeled in this analysis. Treatment discontinuation and transitions to relapsing stages were assumed to implicitly indicate continued disease progression
- In the base case patients treated with cladribine tablets were assumed not to receive new courses at year 5 and 6
- Three lines of treatment were modeled. Patients in the 3rd line of treatment were assumed to remain until the end of the time horizon
- Death was not modeled in this analysis. Patients were assumed to remain in the model for the duration of the time horizon

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DISCLOSURES

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