Cost of Care for Multiple Sclerosis Treatments: A Pharmacoeconomic Evaluation from the Spanish National Health System Perspective

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INTRODUCTION

- Multiple sclerosis (MS) is a chronic, inflammatory neurological disease characterized by focal demyelination of the central nervous system (CNS)[1].
- It is a frequent disease affecting more than 2.5 million people worldwide. In Spain, the prevalence is estimated at 100–125 cases per 100,000 inhabitants[2,3].

- Relapsing/remitting multiple sclerosis (RMS/RRMS) substantially reduces life expectancy and has a marked impact on patient's quality of life[2].
- Currently, multiple treatment options are available in Spain, including fumarates, S1P receptor modulators, monoclonal antibodies, and immune reconstitution therapies (IRTs).
- Given these characteristics, **RMS/RRMS imposes a significant burden on both patients and healthcare systems.**

OBJECTIVES

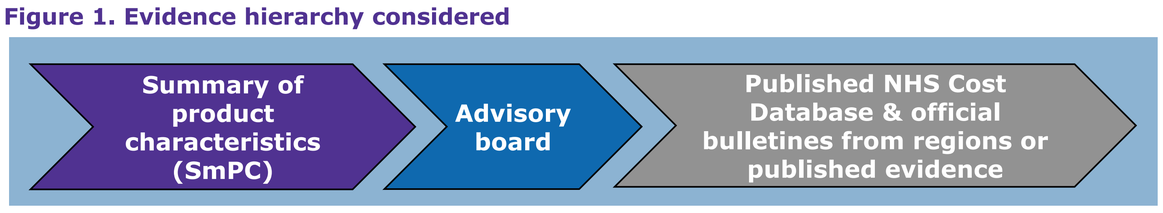
Assess the pharmacoeconomic impact of 12 available treatment alternatives for RMS/RRMS in Spain

Focus on the total cost of care over a 4-year time horizon from the perspective of the Spanish National Health System (NHS)

METHODS

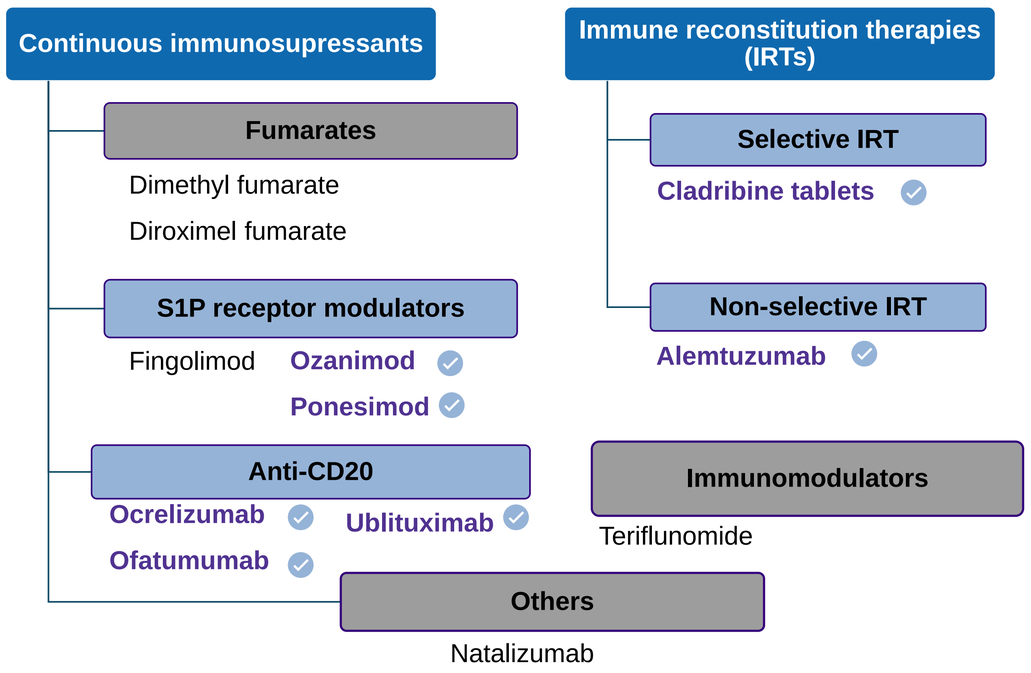
- A cost-of-care model was developed in Microsoft Excel, incorporating published available drug costs and disease management costs, including pre-administration, administration, and monitoring.
- Primary reliance was placed on the summary of product characteristics for each treatment.
- Additionally, a panel of local experts was consulted through an advisory board to validate key model inputs, including posology, administration frequency, and healthcare resource utilization (**Figure 1**).

Figure 1. Evidence hierarchy considered



- The 12 treatments included in the analysis are presented in **Figure 2**. Prices were obtained from published available drug costs, including the official reference price system legislation (RPS)[5] and BOTPLUS[6]. A price discount was applied in accordance with Royal Decree-Law 08/2010[7]. Resource use costs were obtained from the published NHS Cost Database and official bulletines from regions.

Figure 2. Treatments included

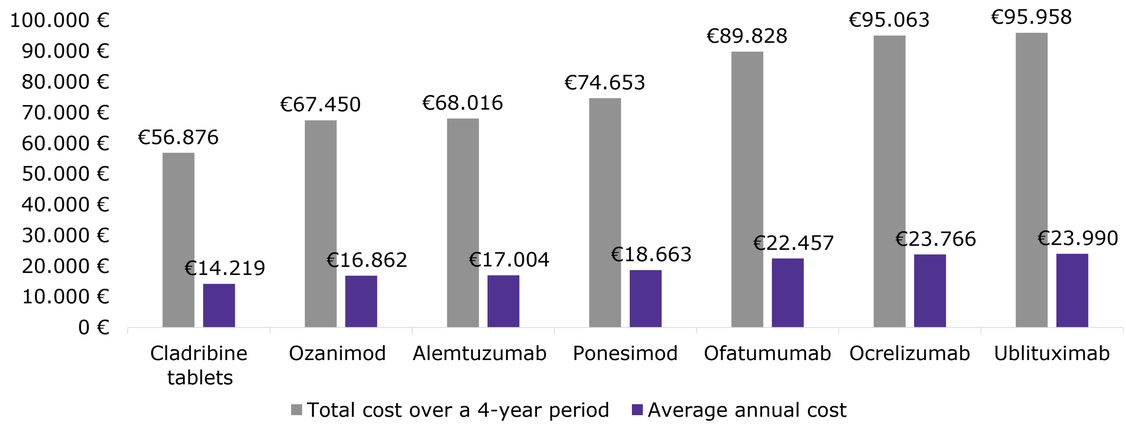


- From the selected therapies, **the analysis and results focused on those classified as high-efficacy and innovative,** such anti-CD20, IRTs, and S1P receptor modulators. These were prioritized because they provide a significant impact for patients while representing the greatest burden for healthcare systems.
- For each treatment, the **total cost over 4-years and the average annual cost were estimated**.

RESULTS

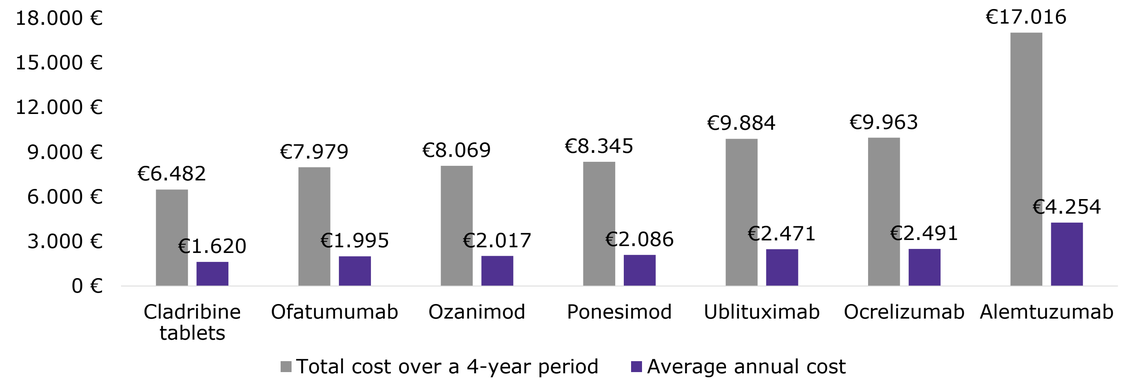
- **Cladribine tablets emerged as the most economically favourable option**, with a total treatment cost of €56,876 and an average annual cost of €14,219 (**Figure 3**).

Figure 3. Total treatment cost



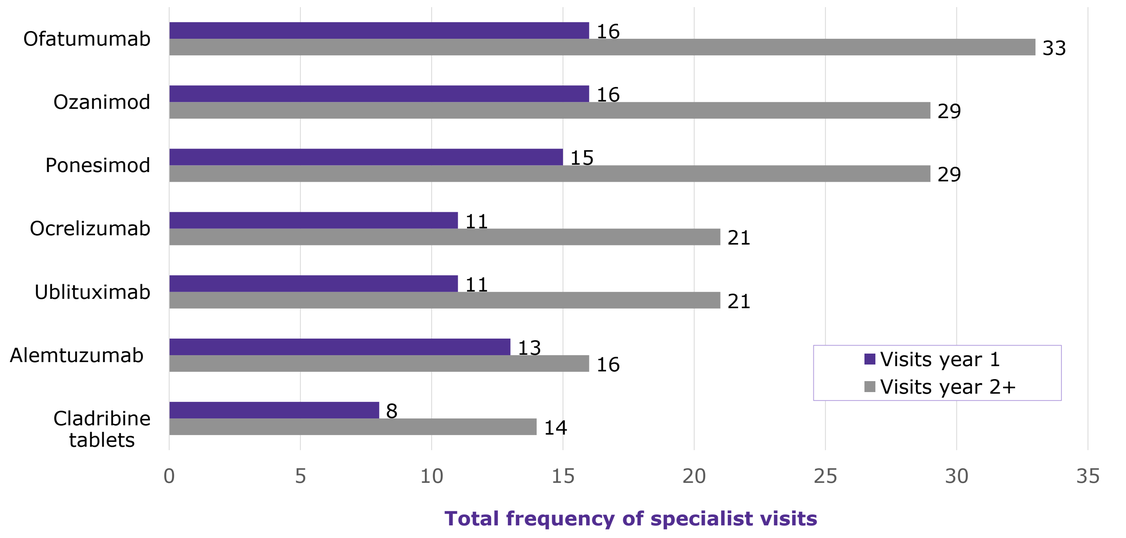
- In terms of resource utilization, **cladribine tablets were the most cost-saving option overall**, with a total cost of €6,482 and an average annual cost of €1,620, whereas alemtuzumab showed the highest total cost at €17,016 and an average annual cost of €4,254 (**Figure 4**).

Figure 4. Healthcare resource utilization costs



- When analyzing the burden on healthcare services including pre-administration, administration and monitoring visits to specialists, **cladribine tablets represented the lowest burden to the healthcare system** when compared to other alternatives (**Figure5**).

Figure 5. Burden on healthcare services (specialist visits)* across four years



* The healthcare services considered included visits to dermatologists, neurologists, ophthalmologists, gynecologists, nursing services, preventive medicine specialist, and pharmaceutical consultations.

- **Cladribine tablets required substantially fewer administration resources than the other high-efficacy and innovative treatments** (**Table 1**).

Table 1. Estimated frequency of resource use for administration across four years

Resource	Cladribine tablets	Alemtuzumab	Ublituximab	Ocrelizumab	Ponesimod	Ozanimod	Ofatumumab
Pharmaceutical dispensing*	2	0	0	0	23	24	24
Pharmaceutical care consultation	2	2	4	4	4	4	4
Outpatient day hospital unit	0	0	9	9	1	0	0
Hospitalization	0	8	0	0	0	0	0
Nursing – IV administration	0	8	9	9	0	0	0
Nursing – Training for SC administration	0	0	0	0	0	0	2
Total	**4**	**18**	**22**	**22**	**28**	**28**	**30**

* An annual pharmaceutical care consultation is assumed for all treatments. Additionally, bimonthly dispensing schedule is assumed for medications not administered in the outpatient day hospital unit. For ponesimod, it is assumed that the first dose is given in the outpatient day hospital unit.

CONCLUSIONS

This pharmacoeconomic analysis suggests that innovative treatments such as cladribine tablets emerge as one of the most cost-saving options for RMS/RRMS in Spain, highlighting its potential to reduce healthcare resource use and supporting the sustainability of the NHS.

These findings offer valuable insights for clinicians and policymakers, supporting informed decision-making in the treatment of RMS/RRMS.

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This research was funded by Merck, S.L.U., Madrid, Spain, an affiliate of Merck (CrossRef Funder ID: 10.13039/100009945)

Presented at ISPOR Europe 2025 | 9 – 12 November | Glasgow, Scotland