A Treatment Impact Analysis of Ocrelizumab in Relapsing Multiple Sclerosis from a Greek Societal Perspective

EE60

E. Pineda[1], A. Adamopoulos[2], M. Giannou[2], K. Vellopoulou[3], G. Kourlaba[4]
[1]Genentech, Inc., South San Francisco, CA, USA; [2]ROCHE HELLAS S.A., Athens, Greece; [3]ECONCARE LP, Athens, Greece; [4]Department of Nursing, National and Kapodistrian University of Athens, Athens, Greece

INTRODUCTION

Multiple sclerosis (MS) is a chronic neurological disease of the central nervous system associated with progressive disability and substantial healthcare and societal burden.

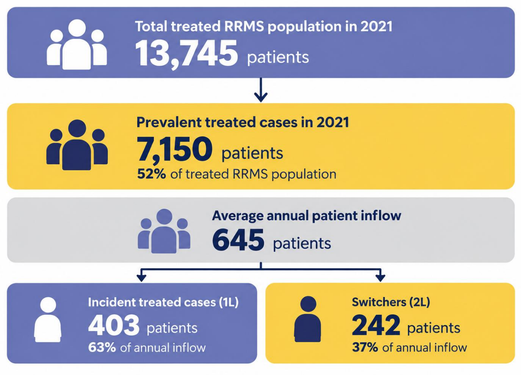
Relapsing multiple sclerosis (RMS) includes relapsing-remitting MS (RRMS) and active secondary progressive MS (SPMS).

The analysis assessed the long-term population-level clinical and economic impact of introducing ocrelizumab into the RMS treatment pathway in Greece.

OBJECTIVE

To estimate from a societal perspective the long-term clinical and economic impact of introducing ocrelizumab into the treatment pathway for RMS in Greece

Figure 1. Patient flow of the eligible population for Ocrelizumab



METHODS

- Study Population: Patients with RRMS or SPMS
  - Treatment Naïve (Incident Population) & switchers & General Population (Prevalent population) (Fig. 1)
- Retrospective analysis: 2021-2030 (10–year time horizon)
- Market with Ocrelizumab versus Market without Ocrelizumab (Table 1)
  - Treatment market includes High and Medium efficacy disease-modifying therapies (HE & ME DMTs): Ofatumumab, Natalizumab, Ublituximab, Dimethyl Fumarate, Fingolimod
  - Estimates of Ocrelizumab market uptake were provided by ROCHE Hellas
  - Two different future scenarios were explored: an expected uptake scenario and an increased-uptake scenario
- Perspective: Societal
- The model evaluated the proportion of MS patients predicted to reach specific Expanded Disability Status Scale (EDSS) score or higher at specified time points
- Annual non-DMT direct MS disability-related costs in each year based on costs associated with each EDSS health state[1]
- Data on Productivity costs per EDSS score in Greece were sourced from The Storms Study[2]
- Mortality & Treatment Discontinuation were accounted for through annual drug costs in the Markov cycles.

RESULTS

- In 2021, the analysis starting, an estimated 7,150 patients were treated with HE or ME DMTs. In subsequent years, the treated population increased according to the estimated average annual patient inflow (Table 2).
- Over a ten-year time horizon (2021–2030), the number of patients reaching EDSS ≥4, EDSS ≥6, and EDSS ≥7 was reduced by 1.96%, 3.70%, and 4.13%, respectively, in the market with ocrelizumab versus without ocrelizumab (Fig. 2).
- By 2030, the market with ocrelizumab was associated with significantly lower cumulative HCRU and productivity costs compared with the baseline scenario without ocrelizumab (Table 2).
- Cumulative HCRU costs were estimated at €341,141,627 vs. €354,254,546, resulting in cost savings of €13,112,919, while cumulative productivity costs were estimated at €738,587,503 vs. €744,080,153 corresponding to savings of €5,492,651.
- Cumulative drug costs were higher in the future scenario, amounting to €904,331,603 compared with €857,171,685 in the baseline scenario, representing an incremental cost of €47,159,917 (Table 2).
- Overall, these results suggest that, while the introduction of ocrelizumab increases cumulative drug costs, this increase is substantially offset by reductions in cumulative HCRU and productivity costs (Figure 3).

Figure 2. Reduction in number of patients reaching health states EDSS ≥4, EDSS ≥6 and EDSS ≥7

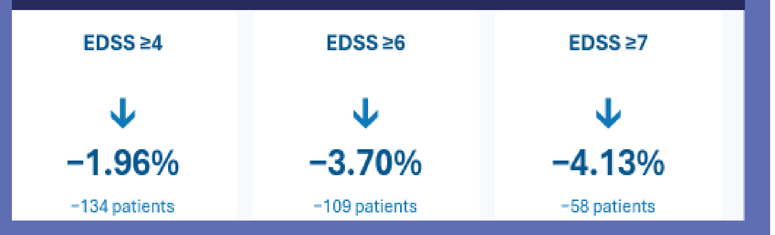
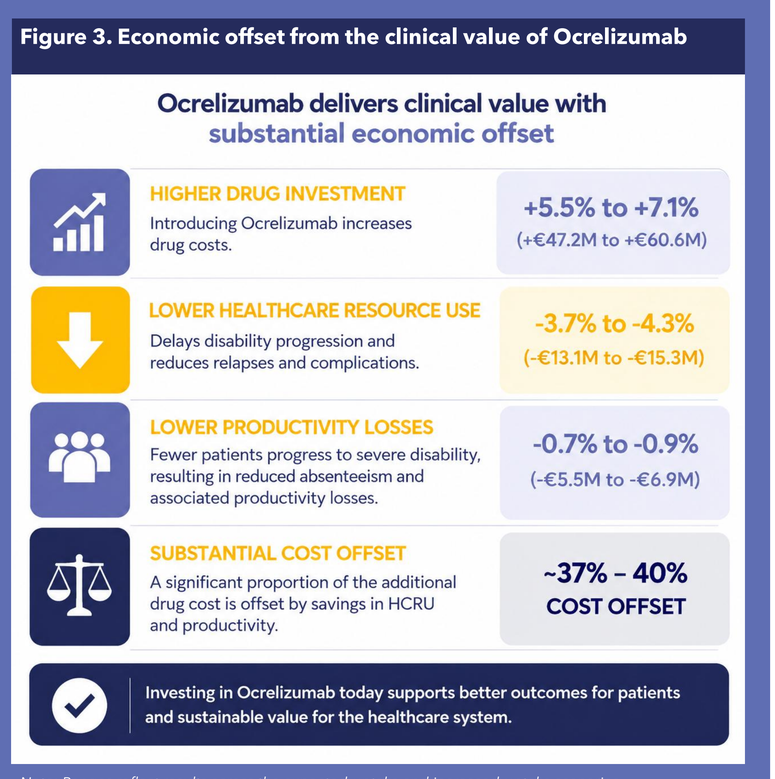


Figure 3. Economic offset from the clinical value of Ocrelizumab



Note: Ranges reflect results across the expected-uptake and increased-uptake scenarios.

Table 1: Market estimates of treatments in the RRMS or SPMS in the market with and without Ocrelizumab – In the expected uptake scenario

World without Ocrelizumab (Current Scenario)										
Treatments	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Ocrelizumab	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Ofatumumab	0.0%	11.1%	21.5%	28.7%	32.8%	32.8%	31.6%	31.1%	31.0%	30.9%
Natalizumab	15.4%	14.6%	14.2%	13.8%	13.1%	12.2%	11.5%	10.8%	10.6%	10.4%
Ublituximab	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	12.3%	15.2%	16.7%	18.5%
DMF	41.3%	40.0%	35.9%	32.9%	30.6%	25.6%	23.5%	22.4%	21.7%	20.5%
Fingolimod	43.4%	34.3%	28.4%	24.6%	23.5%	22.5%	21.0%	20.4%	20.0%	19.7%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
World with Ocrelizumab (Expected Uptake Scenario)										
Treatments	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Ocrelizumab	7.12%	12.4%	15.5%	18.4%	22.3%	25.4%	27.9%	30.7%	30.6%	30.5%
Ofatumumab	0.0%	6.0%	11.9%	18.0%	23.5%	26.1%	27.6%	28.8%	29.0%	28.9%
Natalizumab	12.0%	13.6%	13.2%	12.0%	11.5%	10.5%	9.4%	8.8%	8.2%	8.1%
Ublituximab	0.0%	0.0%	0.0%	0.0%	0.0%	3.4%	3.8%	4.8%	5.5%	6.2%
DMF	39.1%	37.7%	32.5%	28.2%	22.6%	17.8%	14.5%	13.6%	13.7%	13.5%
Fingolimod	41.8%	30.4%	26.9%	23.5%	20.0%	16.8%	16.7%	13.2%	12.9%	12.7%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Table 2: Cumulative incremental results on HCRU, Productivity costs and Drug Costs with the expected uptake scenario

Year	Patients of Interest	Costs (€, 2026)		
		HCRU	Productivity Market	Drug
2021	7,150	- 45,055	- 53,237	2,744,418
2022	7,875	- 140,759	- 171,125	5,781,564
2023	8,818	- 291,754	- 369,328	9,348,195
2024	9,411	- 865,423	- 659,358	13,353,415
2025	9,792	- 1,880,815	- 1,052,019	17,711,292
2026	10,679	- 3,097,796	- 1,575,159	22,762,298
2027	11,692	- 4,503,172	- 2,261,001	28,409,415
2028	12,479	- 6,730,970	- 3,137,538	34,599,795
2029	12,756	- 9,704,405	- 4,213,352	40,931,369
2030	12,956	- 13,112,918	- 5,492,650	47,159,917

Abbreviations: DMTs: disease-modifying therapies; EDSS: Expanded Disability Status Scale; EDSS ≥4.0: significant disability; EDSS ≥6.0: use of walking aid; EDSS ≥7.0: use of wheelchair; HCRU: Healthcare Resource Use; MS: Multiple Sclerosis; RMS: Relapsing multiple sclerosis ; RRMS: Relapsing-Remitting Multiple Sclerosis ; SD: Severe Disability; SPMS: Secondary-Progressive Multiple Sclerosis.

CONCLUSIONS

Introducing ocrelizumab into the RMS treatment pathway in Greece was projected to reduce disability progression and the associated healthcare resource utilization and productivity burden over 10 years.

Despite higher drug expenditure, the model estimated meaningful reductions in HCRU and productivity losses; greater ocrelizumab uptake produced higher reductions in healthcare use.

REFERENCES

1. Gourzoulidis G et al. PND60 - COST-EFFECTIVENESS OF TERIFLUNOMIDE FOR THE TREATMENT OF RELAPSING-REMITTING MULTIPLE SCLEROSIS IN GREECE. Value in Health. 2018;21:S339. doi: 10.1016/j.jval.2018.09.2026.
2. Yfantopoulos J, et al. Pharmacoeconomics 2015;1:102. doi:10.4172/pe.1000102

CONTACT INFORMATION

k.vellopoulou@econcare.gr

ACKNOWLEDGMENTS & DISCLOSURES

EP is employee of Genentech, Inc. KV is employee of ECONCARE.
AA and MG are employees of ROCHE Hellas S.A.

This study was funded by ROCHE Hellas S.A.