

Cost Analysis of Glatiramer Acetate versus Fingolimod for the Treatment of Patients with Relapsing-Remitting Multiple Sclerosis in Spain

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Introduction

- Management of relapsing-remitting multiple sclerosis (RRMS) is actually changing due to the introduction of new more expensive drugs.
- Glatiramer acetate (GA) is an effective, and well tolerated disease modifying drug (DMD) for RRMS treatment¹.
- Fingolimod is the first oral DMD available for RRMS^{2,3}.
- Due to financial crisis, the Spanish government has to slash the health ministry budget by 22.6% for 2013 year⁴.

Objective

To assess the economic sustainability of the management of patients with RRMS in Spain, following the introduction of new DMDs, a direct cost comparison between GA and fingolimod was performed.

Methods

- A one-year cost analysis model was developed.
- DMDs included in the model were:
 - Subcutaneous glatiramer acetate (GA; Copaxone®, Teva Pharmaceutical Ltd)
 - Oral fingolimod (Gilenya®, Novartis)
- Resources considered were:
 - Administration: only for GA⁵. One hour of training with nursing staff in self-injection techniques for subcutaneous administration.
 - Infection management: only for fingolimod⁶. Vaccination for varicella-zoster virus in 5%⁷ of patients and 3 complete blood counts per year.
 - Liver function monitoring: only for fingolimod⁶. Three transaminase tests per year.
 - Macular edema prevention: only for fingolimod⁶. Three ophthalmology visits per year.
 - Cardiovascular monitoring: only for fingolimod⁶. Consisting of 1 ECG before the first fingolimod dose and at 6 hours; 1 hospital day visit for cardiological monitoring during 6 hours on the day of the first fingolimod dose, with follow-up of blood pressure and heart rate every hour.
- The pharmacological costs were calculated based on the ex-factory price of the two drugs assessed, using the doses recommended in the respective SmPC. The 7.5% mandatory rebate was applied⁹.

- Unitary costs were obtained from the Spanish database e-Salud¹⁰ and the General Council of Official Pharmaceutical Colleges¹¹ (Table 1)
- Costs in the model were expressed in € 2012.

Table 1. Unitary costs (€ 2012)

	Costs (€ 2012)
Drug Costs	
GA (Copaxone®), 20 mg/ml 28 1 ml pre-filled syringes per pack	781.25
Fingolimod (Gilenya®) 0,5 mg 28 capsules per pack	1,600.00
Visits	
Nursing attention (1 hour)	19.08
Oftalmologist	37.88
Hospital day	137.59
Vaccines	
Varicella-zoster virus vaccine	43.50
Diagnostic Procedures	
ECG	20.34
Blood count	6.93
Transaminase test	4.93

Results

- The cost of annual treatment per patient was €9,439.42 for GA and €19,602.18 for fingolimod, yielding a difference of €10,162.76 (Table 2)
- Assuming a fixed budget of €5,000,000.00 approximately 530 and 255 patients with GA and fingolimod could be treated, respectively (Figure 1)
- The budget for the treatment of a cohort of 1,000 patients would be €9,439,420 for GA and €19,602,182 for fingolimod (Figure 2)

Table 2. Annual cost per patient (€ 2012)

€ 2012	GA	Fingolimod	Difference (GA vs Fingolimod)
Drug cost	9,420.34	19,292.86	-9,872.52
Administration cost	19.08	0.00	19.08
Infection management cost	0.00	22.97	-22.97
Macular edema prevention cost	0.00	113.64	-113.64
Liver function monitoring cost	0.00	14.79	-14.79
Cardiovascular monitoring cost	0.00	157.93	-157.93
Total ANNUAL cost / patient	9,439.42	19,602.18	-10,162.76

Figure 1. Patients treated with a fixed budget

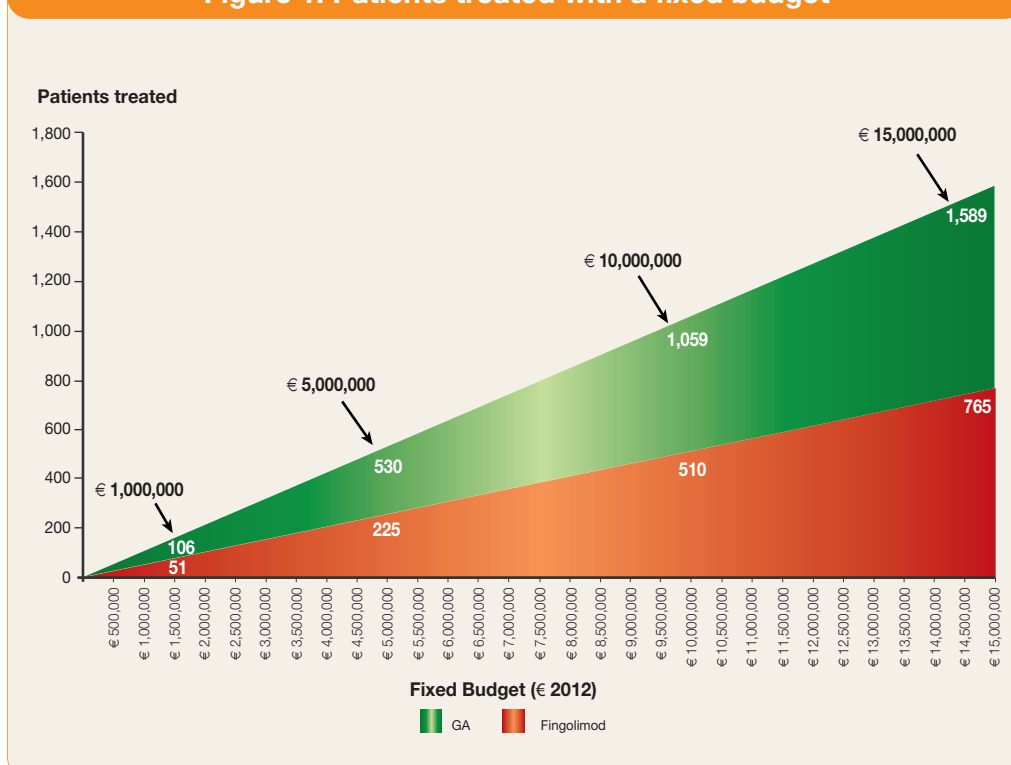
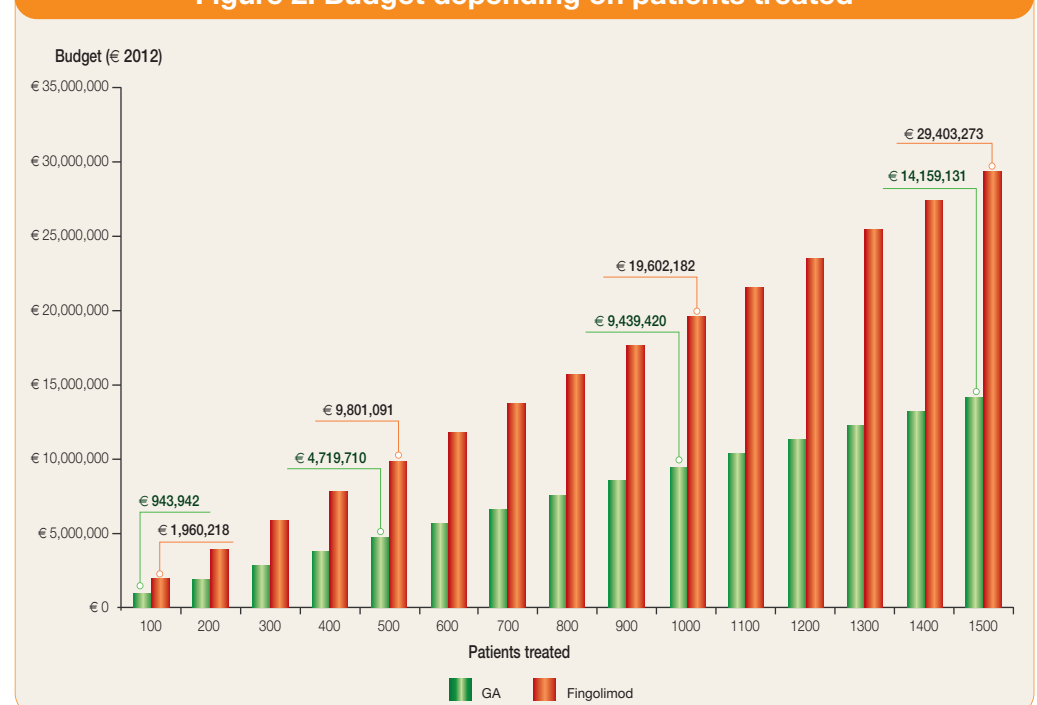


Figure 2. Budget depending on patients treated



Conclusions

- Management of RRMS with fingolimod requires twice the investment of glatiramer acetate.
- In the current context with budgetary restriction in the Spanish National Health System, glatiramer acetate would be a sustainable treatment option for the management of patients with RRMS.

References

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