

Economic impact of the Secondary Progressive Multiple Sclerosis in Spain: Interim analysis of the DISCOVER study

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Background and objective

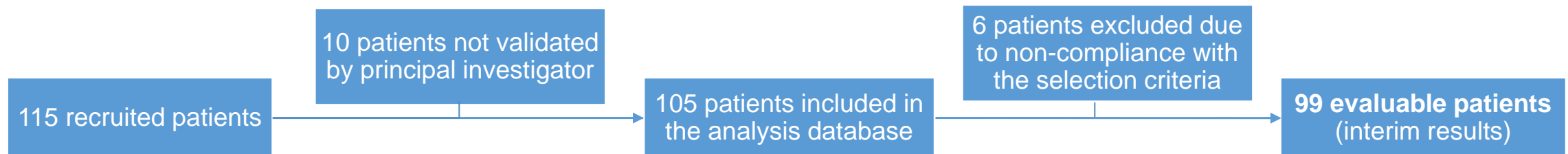
- Multiple Sclerosis (MS) is a **chronic**, inflammatory, autoimmune, and **neurodegenerative disease**.¹
- Around 19% of patients with relapsing-remitting MS (RRMS) treated with a disease-modifying therapy progress to **Secondary Progressive MS (SPMS)** 15 years after disease onset, representing the **most severe stage of the disease**.^{2,3}
- **MS symptoms** lead to a general disability, impacting the quality of life of patients and also being related with an **important economic burden** on the National Health System (NHS), the patients, their caregivers and the whole society.⁴
- There are **limited** published data on the economic impact of SPMS.

Objective

To estimate the economic impact of SPMS in Spain

Methods: Study design, primary endpoint and evaluable patients

- DISCOVER (CBAF312AES01) is an observational, non-interventional, cross-sectional, retrospective and multicenter study.
- Consecutive patients treated and monitored according to **routine clinical practice** in Spain in 34 public hospitals. All data were collected in one single visit.
- Primary endpoint was the **total annual costs per patient** from three perspectives:
 - *Spanish National Health System perspective*: including direct costs.
 - *Patient perspective*: including pharmacological costs payed by patients and other direct health costs privately funded.
 - *Societal perspective*: including direct and indirect costs.
- Interim results from 99 patients are presented:



Cut-off date: 11th October 2019

Baseline sociodemographic and clinical characteristics

Baseline sociodemographic characteristics	
Characteristic	Total (N=99)
Age, years, mean (SD)	53.1 (9.3)
Sex, female, n (%)	62 (62.6%)
Education level	
Without studies, n (%)	1 (1.0%)
Primary education, n (%)	23 (23.2%)
Secondary education, n (%)	35 (35.4%)
Higher education, n (%)	40 (40.4%)
Current familiar situation	
Living alone (excluding caregiver, if it applies), n (%)	13 (13.1%)
Living with a relative, n (%)	86 (86.9%)

SD, standard deviation

Baseline clinical characteristics			
Characteristic	n	Mean (SD)	n (%)
Time since first diagnosis, years	98	17.5 (8.9)	
Time since progression to SPMS, years	99	5.2 (4.3)	
EDSS score at diagnosis	59	2.0 (1.1)	
EDSS score at the time of progression	99	5.0 (1.1)	
EDSS score at the study visit	99	5.9 (0.8)	
EDSS>6	99		47 (47.5%)
Presence of relapses between 12-24 months before the study	78	0.1 (0.4)	10 (12.8%)
Time since the most recent MRI, years	96	1.4 (2.0)	
Presence of black holes in T1 according to the most recent MRI	95	16.4 (12.4)	76 (80.0%)
Presence of Gd+ lesions in T1 according to the most recent MRI	95	5.1 (6.7)	7 (7.4%)
Presence of hyperintense lesions in T2 according to the most recent MRI	96		95 (99.0%)

EDSS, Expanded Disability Status Scale; Gd, gadolinium; MRI, magnetic resonance imaging; SD, standard deviation; SPMS, secondary progressive multiple sclerosis

Impact of EDSS on MSIS29vs domains and EQ-5D-5L index value

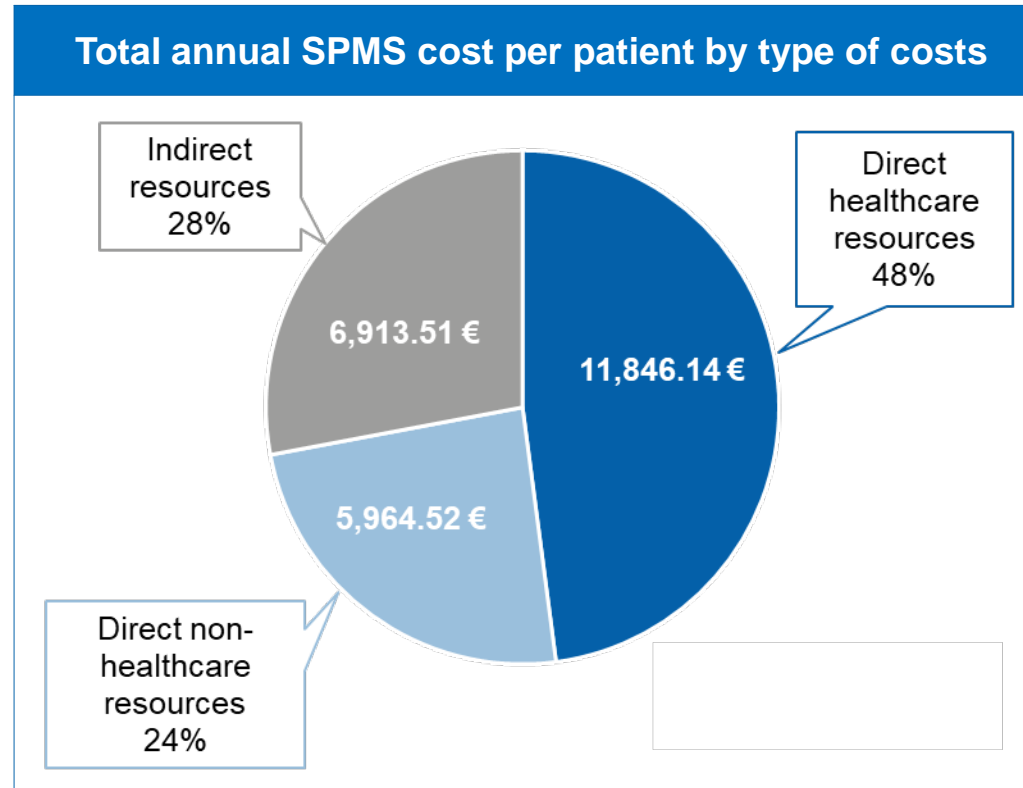
Characteristic	n	Physical impact	Psychological impact
MSIS29 , (0-100), mean (SD)	99	61.5 (23.1)	50.2 (25.5)
MSIS29 according to the presence of relapses in the last 2 years			
Presence of relapses, (0-100), mean (SD)	13	56.8 (23.8)	52.4 (27.3)
Absence of relapses, (0-100), mean (SD)	65	63.5 (21.9)	48.4 (24.9)
MSIS29 according to SDMT score \geq or $<$ 40			
SDMT score \geq 40, mean (SD)	66	61.9 (24.5)	53.7 (24.9)
SDMT score $<$ 40, mean (SD)	31	59.7 (20.5)	42.9 (25.9)

Characteristic	n	Physical impact	Psychological impact
MSIS29 , (0-100), mean (SD)	99	61.5 (23.1)	50.2 (25.5)
EDSS 4-4,5	11	47.4 (22.9)	40.4 (23.8)
EDSS 5-5,5	12	52.4 (19.1))	44.8 (25.5)
EDSS 6	28	57.7 (22.6)	45.2 (23.4)
EDSS 6.5	47	69.0 (22.2)	55.7 (25.7)

Characteristic	n	Index Value
EQ-5D-5L mean (SD)	99	0.47 (0.27)
EDSS 4-4,5	11	0.66 (0.17)
EDSS 5-5,5	12	0.57 (0.15)
EDSS 6	28	0.57 (0,15)
EDSS 6.5	47	0.35 (0.30)

MSIS29v2 scores were higher (higher physical and psychological impact) and EQ-5D-5L index values lower (lower HRQoL) in patients with higher EDSS

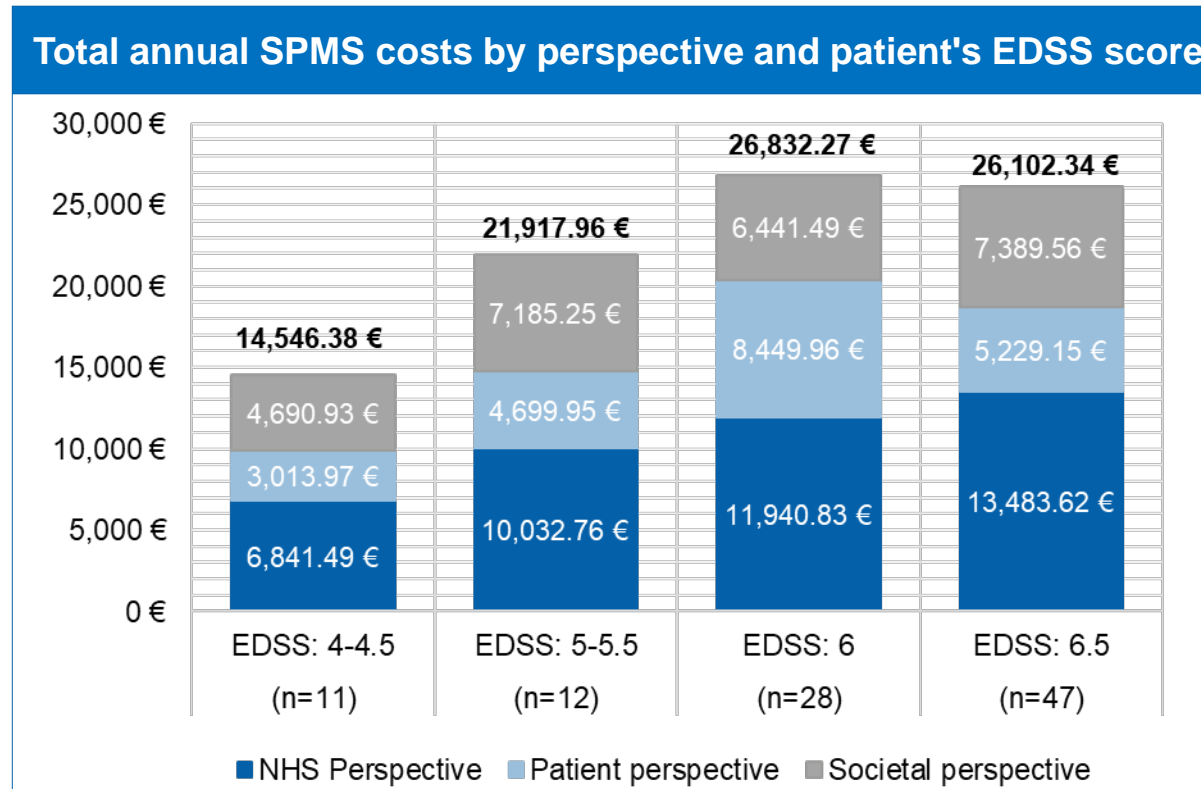
Total annual SPMS costs by type



- **Direct health resources** include outpatient visits, clinical tests, hospitalization, ER, MS treatments, other treatments, other.
- **Direct non-health resources** include mobility aids, vehicle/home adaptations, home help, non-relative caregiver, transportation.
- **Indirect costs** include patient and caregiver (when available) short- and long-term work absences and unemployment, permanent disability, early retirement, absenteeism, presenteeism, reduction of work hours, loss of leisure time, activities and expenditures.

Total annual cost per patient: **24,724.17 €**

Total annual SPMS costs by EDSS

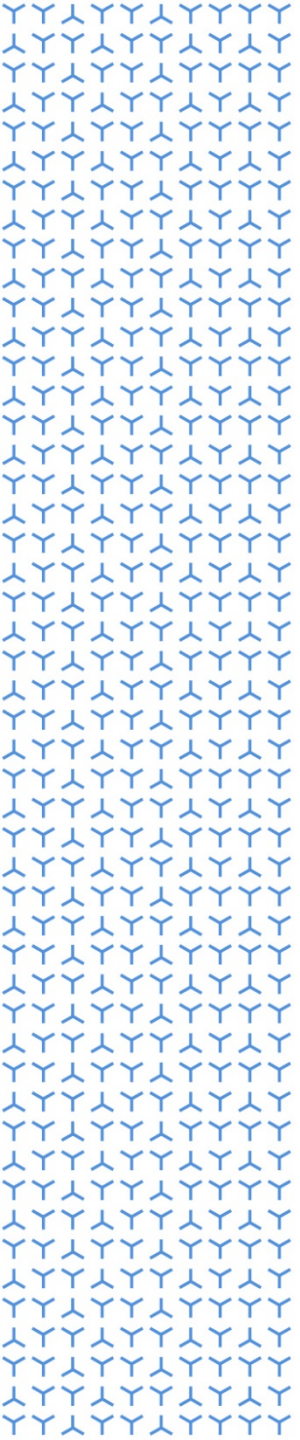


Low direct non-health related costs may be related with the fact that 86,9% of the sampled patients in Spain were living with a relative (indirect caregiver).

Total estimated annual SPMS costs per patient were 24,724 €

Conclusions

- An **economic burden** of **24,724 € per patient/year** was attributable to **SPMS in Spain** from the societal perspective, with direct healthcare costs representing 48% of the total costs.
- These interim results from the DISCOVER study revealed a **significant economic impact** of MS progression, highlighting the importance of implementing **therapeutic strategies** specific to the SPMS patient **within the early stages** of progression.
- Final report will include data from 297 SPMS patients.



Thank you