Background

Multiple sclerosis (MS) is a chronic neurodegenerative disorder that typically affects young and middle-aged adults, leading to substantial health and socioeconomic burden. In Spain, the prevalence of MS is estimated between 0.10% and 0.13% of the total population. MS imposes substantial clinical and financial burden on both the patient and society. Previous studies have not estimated the total societal burden, including extra costs, foregone income and productivity losses endured by MS patients, their caregivers, and employers in Spain. Therefore, the present study was undertaken to address the existing gap and estimate the total cost burden imposed by MS in Spain.

Objective

To estimate the total societal cost (i.e., the cost to the National social security system [Seguridad social], employers, patients, and caregivers) of MS for the year 2020 in Spain, including extra costs incurred related to childcare, salary shortfalls, and unemployment benefits.

Methods

Study Design

This was a cost-of-illness study that estimated the direct and indirect costs associated with MS in Spain.

Data Source

Data on the MS population was sourced from the MS International Federation. For the Spanish population by EDSS, the distribution reported in a Spanish nationwide study was used. Estimates reported from a Spanish nationwide study were used to calculate the cost data. Data that had not previously been counted (i.e., childcare costs, unemployment benefits, forgone income) and other missing information were drawn from the socioeconomic impact of MS study in France.

Table 1 summarises the data source and methodology used to calculate different components of direct and indirect costs.

Table 1. Data sources and the calculation used to derive cost estimates

Table 1 (Continued)

Table 2. Distribution of the MS patients by EDSS stage

Sick leaves for patients, employees, caregivers, and SS

Data from Clies was used

Patients

• Number of persons taking sick leave at each EDSS stage was calculated from the total net income per average person

Slower salary progression = Estimates from the French study which were adjusted by salary levels across average income

Employers’ production losses

Costs for edits from the labour market × total incapacitation periods stemming from premature departures from the labour market × share of productivity foregone during an employer’s sickness absence

Production per person = Spanish GDP: number of persons on the labour market

Loss of income per person (by EDSS stages)

• % of MS patients receiving informal help at each EDSS stage

• Average Spanish income × (total number of days of work × incapacitated to the total population)3

Early retirement and invalidity pension costs

• % of MS patients retiring early annually

• Patients’ income = annual number of patients with early retirement × average salary for each age bracket

• Patient’s forgone income = income they would have received – retirement benefit

Unemployment benefits

Data from the French study were adjusted to the number of Spanish MS patients who left the labour market every year and unemployment benefit amounts, adjusted to the average Spanish income

Foregone income for workers

Estimates from the French study were used and applied to the Spanish MS population, adjusted to the average Spanish income

EDSS, Expanded Disability Status Scale; GDP, gross domestic product; MS, multiple sclerosis; OOP, out-of-pocket expenses; SS, Social Security

The results of the study confirm that MS exerts a substantial socio-economic impact and can hamper the personal and professional lives of MS patients. The findings show that care is associated with negative productivity impact for employers and the economy. These findings are relevant for providers, payers, and policymakers in Spain for future healthcare decision-making, particularly with the increasing advances in scientific innovation relating to the availability of high efficacy treatments (HETs) for the effective management of MS.

Conclusions

The results of the study confirm that MS exerts a substantial socio-economic impact and can hamper the personal and professional lives of MS patients. The findings show that care is associated with negative productivity impact for employers and the economy. These findings are relevant for providers, payers, and policymakers in Spain for future healthcare decision-making, particularly with the increasing advances in scientific innovation relating to the availability of high efficacy treatments (HETs) for the effective management of MS.

Timely diagnosis, holistic disease management and timely intervention with HET options available in MS in relapsing-remitting MS, has the potential to reduce the burden and societal cost of the disease.

References


Disclosures

This study was funded by Novartis Pharma AG, Basel, Switzerland. Marta Aguirre, Elizabeth Karpf, and Antonios Petropoulos are employees of Astellas Pharma, an affiliate of Astellas America, while Santosh Thomas continues to work for this company. All other authors report no potential conflicts of interest that might conflict with their objectivity.

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