Multiple sclerosis (MS) is an autoimmune, inflammatory neurological disease that causes disability, particularly among young patients. It is a chronic progressive disease that occurs mainly in young and middle-aged people (1-2). According to the World Health Organization (WHO), the total number of people affected with MS is estimated at 2.5 million globally; of those patients, approximately 650,000 are diagnosed in Europe and 520,000 in North and South America, with an average prevalence of 10 cases (3) and an average incidence of 2.1 to 4.4 per 100,000 population (4). According to data from the World Health Organization, the mortality rate worldwide is estimated to be 0.04% to 0.18% per year, with the highest rates in the lower-income countries ranging from 0.4% to 1.0% annually and the lowest rates in the upper-income countries ranging from 0.1% to 0.3% annually. Conversely, Slovakia has the fourth highest incidence of MS (7.5/100,000 population). An estimated 8,401 patients suffer from MS in Slovakia, with the estimated number of follow-up patients being 8,151 patients (5). The study cohort comprises all patients aged 15-45 years. The disease severity is highly variable across individual patients, but has 5 main disease-modifying clinical presentations in relation to the functional status of the patient (6). Progression of the disease leads to increasing degrees of disability (7), and the course of the disease is unpredictable. In the evaluation of clinical presentation, the 20-degree table describes the disability of the patient (EDSS score) (8). The definition of disability is a way of measuring physical disability (9). The socio-economic burden of MS was evaluated in several studies worldwide, in which rising costs are directly correlated proportionate to disease severity.

OBJECTIVES

The comprehensive economic costs of MS according to EDSS states can only be assessed by evaluating MS management in real-world clinical practice. The objective of this cross-sectional study was to measure resource utilization and the costs associated with healthcare management of MS in Slovakia, and to provide some cost-effectiveness evaluations.

METHODS

Thirty-four MS specialists across Slovakia were asked to participate in the study. The study had two e-forms: In Form A the structured descriptive epidemiological data registered in the MDs databases were collected (e.g. the total prevalent number of patients followed up in the centre according to the EDSS etc.), Form B consisted of patient case histories and contained information from patients' medical records. However, only 17 of the 34 MS specialists were able to complete Form B (structured descriptive epidemiological data) due to the remaining 17 specialists had no possibility to extract the information from their databases. Descriptive epidemiological data (of 2,552 MS patients from 27 MS specialists across Slovakia) were collected electronically and analysed. In total, 152 follow-up patients followed up from 2011 to 2012 in MS centres were randomly included in the study. Continuous variables were calculated using standard descriptive methods and the costs data were adjusted for the year 2013. Visual analogue scale (VAS) of Health assessment index was used in MS management were evaluated (patient/patient visits, diagnostics, prescription drugs, and medical examinations). Costs of adverse events (AEs) were set for the treatment of a single event. All healthcare costs were calculated per patient per year. The analysis was performed from the Slovak Health Insurance perspective. The hypotheses of the study are based on the following sources of data: 1. Drug costs. List of reimbursed drugs valid from July 2013 (11), 2. Hospitalization costs data from the Central Registry of Contracts (12), 3. Procedure costs data from the Central Registry of Contracts (12) and Catalogue of Medical Procedures (13).

RESULTS

According to the cross-sectional study results, 77% of patients had the relapsing-remitting form of MS (RRMS), which is the most common clinical form (48-65% in literature), characterized by acute attacks of usual CNS dysfunction followed by symptomatic remission (see Figure 2). The primary-progressive form (PPMS) is free from attacks, and occurs in about 10% of patients, mostly in men; 3% of patients in the study cohort comprises all patients aged 15-45 years (1, 2). According to the World Health Organization (WHO), the total number of patients diagnosed with MS is estimated as at 1.3 million globally. Of these patients, approximately 630,000 have MS. The distribution of patients according to form of MS is shown in Figure 2. The most frequently used DMARDs were plasmapheresis (30%), interferon beta-1a 85 (5%), mitoxantrone (25%) and fingolimod (8% in Figure 5).

CONCLUSION

The cross-sectional study determined the average annual direct cost for MS patient to be € 4,146, excluding DMARD costs. DMARD costs increase for patients with an EDSS score of 4 and peak costs at an EDSS score of 6, with considerable decrease in MS costs for EDSS scores of 5-7. As the EDSS score increase, the cost of medical devices rises. The estimate of total costs therefore represents a realistic cost of the disease allowing for a realistic image of overall resource consumption associated with MS therapy in the Slovakian healthcare system.

DISCLOSURE

This study was funded by Roche Ireland.

REFERENCES