tion for Cx43 gap junctional communication in astrocytes in CNS recovery. This work was supported by the Multiple Sclerosis Society of Canada and Elan Pharmaceuticals.

Economic burden

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Healthcare utilisation among insured multiple sclerosis patients in the U.S. from 2005–2006

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Objectives: Published estimates of U.S. healthcare utilization in multiple sclerosis (MS) rely on data that may be more than a decade old. Medical resource use in the current era of disease modifying MS therapies (DMTs) remains poorly understood. We investigated healthcare utilization by MS patients in the U.S. using the most recent administrative data available. ***Methods:*** We identified MS patients in a HIPAA-compliant commercial administrative claims database spanning May 2000–June 2006. The database contained integrated inpatient, outpatient, and pharmacy records on over 12 million covered lives per year from all major U.S. regions. The study population included subjects with two ICD-9 CM codes for MS (340.xx) at any time and continuous coverage from July 2005 to June 2006. We reported descriptive statistics for drug and service use from July 2005 to June 2006 both for the overall population and by DMT status. Hospitalizations and outpatient visits were considered condition related if MS was recorded as the primary or secondary diagnosis for that visit. ***Results:*** 12,216 subjects met the inclusion criteria; 77% were female and 84% were age 30–59 (mean 47 years). Significant comorbidity was uncommon. Fifty-six percent of subjects used at least one DMT, with interferon beta-1a (intramuscular) the most common (19.8%), followed by glatiramer acetate (19.4%), interferon beta-1a (subcutaneous, 10.2%), interferon beta-1b (9.2%), and mitoxantrone (0.9%). Six percent of DMT users took two or more agents. Subjects who took DMTs were more likely to use medications for symptom relief: 43% used medication for depression, 31% for spasticity, 25% for bladder problems, 19% for fatigue, and 28% for pain/dysesthesias. For all 12,216 subjects the mean (SD) annual number of physician visits was 9.1 (8.8); 2.6 (4.0) were MS-related. Twelve percent of all subjects were hospitalized during the study period (56% of these were condition related); 11% had emergency department admissions (13% condition related); 2.4% had ICU stays (44% condition related); and 1.8% had skilled nursing facility admissions (58% condition related). ***Conclusion:*** Despite the introduction of DMTs, many patients with MS still require intensive medical care, including frequent outpatient visits and hospital stays. Novel treatments for MS may reduce this burden in the future. This study was funded by Genentech, Inc. and Biogen Idec, Inc.

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Economic analysis of treatment of multiple sclerosis with Tysabri alternative to standard disease-modifying drugs in Norway

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Background: Two classes of disease-modifying drugs (DMDs), (interferon-beta; IFNB og glatirameracetat; GA) with four medicaments, Avonex®, Betaferon®, Rebif® (IFNB) og Copaxone® (GA) have been used in the treatment of MS in Norway for approximately 10 years, with direct cost reimbursement from the Norwegian health authorities. Question has been raised whether a fifth drug, natalizumab (Tysabri®), should also be approved for reimbursement. Tysabri® has a higher medicament cost than the other DMDs and it has been indicated that cost considerations will be of some concern in this decision. ***Objectives:*** To make an economic analysis of MS treatment with Tysabri® alternative to other DMDs in Norway. ***Methods:*** A Markov-model was developed to illuminate the problem complex. Direct and total cost, as well as QoL related to different EDSS steps evaluated in a MS cohort from the County of Hordaland. ***Results:*** The base-case analysis indicated that treatment with Tysabri® may contribute to reduced costs to society and increased health gains for patients compared to treatment other DMDs. The cost differences are, however, small. For a 20-year period the total cost reduction per patient was estimated to be less than € 3700. The information used for the analysis also has some uncertainties, and changes of modest magnitude in the information, mainly in the information on costs caused by the illness, the effect of treatments and discount rates, may change the results to increased instead of reduced cost to society, as shown in the base case analysis. However, treatment with Tysabri® may also contribute to health gains, 1,17 QALY gained per patient in the base case for the 20-year period as a whole. Even in the cases where cost increases were indicated, these were of so modest magnitude that the cost per QALY gained did never exceed € 17 500. This is usually considered very acceptable for such health gains. ***Conclusion:*** The cost of Tysabri® treatment of MS in Norway is comparable to the cost related to standard DMD treatment. Cost considerations should therefore not prevent Tysabri® from being approved for direct reimbursement by Norwegian health authorities.

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Factors that influence employment status of people with multiple sclerosis: a multi-national study

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Early published studies of the employment situation of people with MS have focused on identifying factors that differentiate the employed from the unemployed for predicting which individuals are at risk for leaving the workforce, which have included disease and demographic characteristics, pre-morbid personality, coping style, workplace characteristics and social support. Currently there are no comprehensive data available on the employment situation of people with MS in Europe. ***Objectives:*** identify factors that influence choice/ability to maintain employment; identify demographic and disease characteristics that differentiate employed from unemployed. ***Methods:*** A comprehensive, self-administered questionnaire, formatted as a checklist of factors that can either facilitate or hinder job maintenance, divided into six major categories was administered in 18 European countries. Analyses were formed for 9 individual countries and for the combined sample. ***Results:*** 1,141 questionnaires were included in the combined sample analysis. Depression ($p < 0.001$) and mobility difficulties ($p < 0.001$) were statistically significant, but not fatigue, in differentiating employed and unemployed people with MS. In the combined sample analysis positive attitudes toward work and positive co-workers' attitudes appear to promote job maintenance. In the individual country analyses, MS-related factors had a negative influence on job maintenance in only 1/9 countries, whereas among factors that make employment easier, financial aspects and workplace