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OBJECTIVES: Recently, long-term treatment effects of GA and interferons-ß (IFNs) observed in the UK multiple sclerosis Risk Sharing Scheme (RSS) have become available. Using a UK National Health Service perspective, we evaluated the cost-effectiveness of GA for RRMS using either randomised controlled trial (RCT) or RSS data. **METHODS:** A discrete Markov model comparing GA (20 mg qd or 40 mg tiw) to BSC, IFN-1a 44µg, IFN-1a 22µg, IFN-1a 30µg and IFN-1b was developed. The model has 21 health states defined by Expanded Disability Status Scale and a 50-year time horizon. It also incorporates adverse events, treatment discontinuation, various second-line treatments and neutralising antibodies. Relapse rates and disability progression transition probabilities were obtained from natural history studies in RRMS patients. Treatment effects were informed by a de novo network meta-analysis using results of RCTs and outputs were compared to a scenario in which real-world data from the RSS was used. Univariate and probabilistic sensitivity analyses were performed. **RESULTS:** GA dominated IFN-1a 22µg and IFN-1a 30µg as it represented lower overall costs and QALY gains of 0.226 and 0.067, respectively. GA is cost-effective compared to BSC at an incremental cost-effectiveness ratio (ICER) of £14,789 per QALY gained. Albeit a reversed ICER was observed, GA remained cost-effective against IFN-1a 44µg and IFN-1b. The model was most sensitive to the treatment-specific hazard ratio (HR) for disability progression. Other influential factors included the proportion of patients switching to second-line treatments, discount rates, treatment waning and health-state costs. Scenario analyses using treatment-specific HR from the RSS confirmed the robustness of the base case findings and compared well with the 6-year RSS results. **CONCLUSIONS:** Different modelling approaches and data sources consistently show that GA is a cost-effective option for treating RRMS. GA was shown to be more effective than predicted at the outset of the RSS.

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THE SOCIETAL IMPACT OF NATALIZUMAB TREATMENT IN THE ITALIAN RELAPSING-REMITTING MULTIPLE SCLEROSIS CLINICAL PRACTICE: THE TYSABRI® PHARMACOECONOMICS (TYPE) STUDY

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OBJECTIVES: Multiple sclerosis (MS) is a chronic, immune-mediated, demyelinating disease of the central nervous system affecting more than 2 million people worldwide. MS progressively impairs patients' ability to perform independent activities of daily living, negatively affects social interactions and relationships, and reduces working capacity. Furthermore, the afore mentioned issues imply a cost to society. This study aimed to evaluate the societal impact of the treatment of MS with natalizumab in Italian clinical practice. **METHODS:** A prospective, observational study was conducted in 25 specialized centres throughout Italy (N=147). The direct and indirect costs, as well as the health-related quality of life of patients with MS receiving biologic treatments, were estimated, while the societal impacts were determined using a cost-utility approach. **RESULTS:** Following the introduction of natalizumab, non-medical and indirect costs decreased both overall and as a proportion of the total costs, there was a reduction of 55.4% at baseline to 29.1% at one year follow up. The increased costs associated with drug treatment were nearly offset by savings from non-healthcare direct costs and increased productivity, resulting in an incremental cost of +0.5% between baseline and follow-up. This analysis estimated that, compared to patients at baseline, the first year of treatment with natalizumab was associated with an incremental cost of €112.70, with a concomitant increase in average EQ-5D utility score of 0.04. **CONCLUSIONS:** This study confirms that MS imposes a considerable burden on patients, their families and caregivers, underlining the importance of considering the societal perspective in the appraisal process. Furthermore, initiation of treatment with natalizumab in real-world Italian clinical practice delivers a noteworthy benefit in societal terms.

PND52

COST-UTILITY ANALYSIS OF DIMETHYL FUMARATE VERSUS FINGOLIMOD AND TERIFLUNOMIDE IN PATIENTS WITH RELAPSING-REMITTING MULTIPLE SCLEROSIS IN COLOMBIA

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OBJECTIVES: To determine cost-utility of dimethyl fumarate versus fingolimod, teriflunomide and no treatment in patients with Relapsing-Remitting Multiple Sclerosis (RRMS) in Colombia (South America). **METHODS:** The base case patient has a RRMS severity < 2.5 according to Expanded Disability Status Scale, the perspective of analysis was from Colombian health system. Time horizon was 20 years; the annual discount rate was 5% for benefits and costs. Outcomes: proportion of patients without relapsing during 24 months, survival rate at 20 years, Quality-Adjusted Life Years (QALYs). Direct costs were calculated for the year 2016. A Markov decision model was constructed in a hypothetical cohort of 1000 patients, considering ten disease' states. The model represents the probabilities of moving from state to state, leaving the treatment and dying. **RESULTS:** Clinical efficacies are: dimethyl-fumarate, 36%; fingolimod, 28%; teriflunomide, 12%. Most common complications include depression (53%), spasticity (49%) and fatigue (70%). Total discounted costs to 20 years are: no treatment, US$ 41,493; dimethyl-fumarate, US$ 354,665; fingolimod, US$ 323,977; teriflunomide, US$ 202,896. Discounted QALYs to 20 years in 1000 patients are: no treatment, 7,435; dimethyl-fumarate, 9,161; fingolimod, 8,792; teriflunomide, 8,016. ICER versus no treatment are: dimethyl-fumarate, US$ 181,429; fingolimod, US$ 208,052; teriflunemide, US$ 277,588. Survival rates to 20 years are: no treatment, 68.3%; dimethyl-fumarate, 90.2%; fingolimod, 86.4%; teriflunemide, 76.5%. To willingness to pay higher than US$ 150,000, dimethyl-fumarate has the highest probability to be the chosen treatment, for lower values, the highest probability is no treatment strategy. In the univariate sensitivity analysis, the dimethyl-fumarate case base ICER is less than US$ 130,000 versus fingolimod and teriflunomide, according to the value reported in the willingness to pay curves. **CONCLUSIONS:** Dimethyl fumarate is the most cost-effective strategy in patients with RMSS, both in terms of improved survival and long term QALYs as well as in terms of lowest ICER.

PND53

RATES AND PREDICTORS OF SHORT TERM DISABILITY CLAIMS AMONG MIGRAINE PATIENTS IN THE US

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OBJECTIVES: To determine risk of and to identify predictors of a short term (ST) disability claim among US commercially insured migraineurs. **METHODS:** The Truven Health MarketScan Commercial and Health and Productivity Management Databases were used to identify adult migraine patients (ICD-9 code 346.XX and/or migraine-specific medications) from 2008-2013. Continuous enrollment was required for 12 months before and after the day they received migraine diagnoses and/or medications (index). Migraine and non-migraine patients were matched 1:1 on age, gender, region, health plan type, and index date. The primary outcome was presence of a ST disability claim one year post-index, assessed using logistic regression. The first model compared migraine patients to their matched controls while the second identified risk factors within migraine patients. **RESULTS:** 71,742 migraineurs and their matched controls met inclusion criteria (mean age=41.1 years [SD=9.7], 73.0% female). Overall, 16.7% of migraine patients had an ST disability claim compared to 6.7% of matched controls ($p<0.001$); total ST disability duration was greater for migraine patients (47.7 days [SD=48.3] versus 39.3 days [SD=40.1], $p<0.001$). Migraine patients were 1.94 times more likely to have a ST disability claim than their matched controls after adjusting for baseline demographic and clinical characteristics (95% CI[1.83, 2.05], $p<0.001$). Comorbid conditions including anxiety, asthma, chronic pain, depression, diabetes, fibromyalgia, other headache disorders, and hypertension were associated with increased risk of a ST disability claim in both models; increased age and being male were both associated with lower risk. Untreated migraine patients were more likely have ST disability claims than those treated with acute or prophylactic medications (OR=1.23) or both--acute and prophylaxis (OR=1.07). **CONCLUSIONS:** Migraine patients are twice as likely to have ST disability claims than, non-migraine patients during one-year study period. Untreated migraine patients and those with certain chronic conditions were more likely to have ST disability claims.

PND54

THE IMPACT OF INCREASING DISABILITY ON EMPLOYMENT AND CAREGIVER BURDEN AMONG MULTIPLE SCLEROSIS PATIENTS IN BRAZIL

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OBJECTIVES: Multiple Sclerosis (MS) is a chronic disease associated with substantial clinical and socioeconomic burden. MS patients experience increasing levels of disability as their disease progresses. This study investigates the association between increasing Expanded Disability Status Scale (EDSS) and its impact on relapsing-remitting (RRMS) MS patients. **METHODS:** RRMS patients in Brazil were drawn from the Adelphi MS Disease Specific Programme, a global cross-sectional study of MS patients. Multiple logistic, linear and ordered logistic regressions determined the association between physician reported EDSS (<3, 3-5 and >5) and presence of an informal caregiver, weekly informal caregiver hours, and employment status. Regressions adjusted for age, gender, BMI and number of concomitant conditions. Reference category was <3. **RESULTS:** 412 RRMS patients were included in this analysis. The likelihood of part-time employment, or unemployment, increased with EDSS (3-5: OR = 2.18, p=0.018; >5: OR =3.32, p=0.039). Increasing EDSS was associated with a higher likelihood of informal care (3-5: OR = 3.72, $p<0.001$; >5: OR = 6.27, $p<0.001$) and higher weekly informal caregiver hours (3-5: +5.40, p=0.019; >5: +19.32, p=0.012). **CONCLUSIONS:** Increased EDSS is associated with significantly lower employment as well as increased caregiver burden. RRMS patients should start effective treatments early to delay disease progression. DISCLOSURE: Study supported by Biogen

NEUROLOGICAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PND55

THE ASSOCIATION OF ADHERENCE TO DISEASE-MODIFYING DRUGS AND OUT-OF-POCKET COSTS IN PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES: To evaluate the relationship between adherence to disease-modifying drugs (DMDs) and out-of-pocket costs in patients with multiple sclerosis (MS). **METHODS:** Data were obtained from a sample of patients with MS (n=1112) from the US National Health and Wellness Survey and Lightspeed Research panel and its affiliates. Patients completed a 30-minute Internet survey between April and October 2015. The survey included questions about demographics, disease severity, symptoms, comorbidities, treatments, and monthly out-of-pocket costs. Patients indicating current DMD treatment were included. Adherence was evaluated using the 4-item Morisky Medication Adherence Scale (MMAS-4). MS-related