resource utilisation and the costs associated with health care management of MS in the Czech Republic and to provide a basis for cost-effectiveness evaluation with the use of subcutaneous interferon beta-1a (SC IFN-beta 1a) vs. intramuscular interferon beta-1a (IM IFN-beta 1a) over 2 years in the management of relapsing forms of multiple sclerosis (MS) from a US health care payer perspective. METHODS: The 2-year decision analytic model was populated with results of a head-to-head randomized clinical trial from the EVIDENCE (Evidence of Interferon Dose-response: European North American Comparative Efficacy) study, a direct head-to-head comparison of 44 mcg SC IFN-beta 1a three times per week vs. 30 mcg IM IFN-beta 1a once per week. Relapse data from 16-month results were extrapolated for the 2-year model. Disease-modifying drug (DMD) costs were based on 2014 wholesale average cost with consideration of patient copayment in the base case. The model was able to customize the rate of copayments for MS as well as to incorporate contractual discounts, if desired. One-way sensitivity analyses were conducted on key parameters using alternate plausible values, including the rates of real-world DMD adherence. RESULTS: For a hypothetical insured patient with MS who would be treated with DMDs. More relapses were avoided with SC IFN-beta 1a over 2 years (797) than with IM IFN-beta 1a over 2 years (778). The average cost-effectiveness of 44 mcg SC IFN-beta 1a was lower (more favourable) than the average cost-effectiveness of 30 mcg IM IFN-beta 1a (€1,446 per relapse avoided). Sensitivity analyses around model input values showed the model was robust and cost-effectiveness results were consistent. The model results are most sensitive to drug cost. CONCLUSIONS: Cost-effectiveness assessment may facilitate the decision-making process in selecting MS treatments. Using the highest-quality clinical data (Level 1, head-to-head study, EVIDENCE), the cost-effectiveness of 44 mcg SC IFN-beta 1a was shown to be favourable compared with 30 mcg IM IFN-beta 1a.

PND41 COST-EFFECTIVENESS EVALUATION OF DATA FROM THE EVIDENCE OF INTERFERON Dose-response: EUROPEAN NORTH AMERICAN COMPARATIVE EFFICACY STUDY Phillips Al, Edwards NC, Lococke JC1

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OBJECTIVES: To evaluate the cost-effectiveness of 44 mcg subcutaneous interferon beta-1a (SC IFN-beta 1a) and intramuscular interferon beta-1a (IM IFN-beta 1a) during the comparative phase and open-label extension phases of the EVIDENCE (Evidence of Interferon Dose-response: European North American Comparative Efficacy) study. METHODS: A decision analytic model from a US health care payer perspective was populated with 2-year data from the head-to-head comparison of 44 mcg SC IFN-beta 1a (comparative and open-label extension phases). EVIDENCE results showed that the annualized relapse rate of 44 mcg SC IFN-beta 1a patients was 0.46 during the comparative phase and 0.34 during the open-label extension phase. The annualized relapse rate of IM IFN-beta 1a patients during the comparative phase was 0.64. IM IFN-beta 1a patients who switched to 44 mcg SC IFN-beta 1a for the open-label extension phase had an annualized relapse rate of 0.32. These data were used to model the cost-effectiveness of 44 mcg SC IFN-beta 1a and IM IFN-beta 1a during the comparative phase as well as for the combined comparative and open-label extension phases (for patients remaining on SC IFN-beta 1a throughout and for those switching from IM IFN-beta 1a in the comparative phase to SC IFN-beta 1a in the open-label extension phase). Disease-modifying drug (DMD) costs were based on 2014 wholesale average cost with consideration of patient copayment in the base case. RESULTS: The cost-effectiveness for 44 mcg SC IFN-beta 1a and IM IFN-beta 1a during the comparative phase was $132,654 and $148,749 per relapse avoided, respectively. The cost-effectiveness of patients who remained on 44 mcg SC IFN-beta 1a throughout the study was $99,398 per relapse avoided, while the cost-effectiveness of IM IFN-beta 1a patients who switched to 44 mcg SC IFN-beta 1a for the open-label extension phase was $161,929 per relapse avoided. The model was robust and was most sensitive to DMD cost. CONCLUSIONS: This decision analytic model evaluation shows that remaining on 44 mcg SC IFN-beta 1a and switching from IM IFN-beta 1a to 44 mcg SC IFN-beta 1a were cost-effective treatment strategies.
and secondary analysis, respectively. Extensive sensitivity analyses indicated that results were robust. The most influential number of relapses avoided for the overall study in population was that the estimated probability of hospitalization per seizure and unit cost of hospitalization. The BIA showed that the annual cost of treating uncontrolled epileptic patients with LCM in Greece ranges between €274.9 and €271.5 million, in the primary and secondary analysis as compared to the reported with standard AID (€273.5 and €279.9 million). CONCLUSIONS: LCM appears to be both less costly and more effective compared with standard AED treatment in Greece and results in cost savings ranging between €2.4 and €8.5 million. Study funded by UCB Pharma.

PND3

COST-EFFECTIVENESS OF SUBCUTANEOUS VERSUS IMMUNOSUPPRESSIVE INTERFERON-BETA 1A IN PORTUGAL BASED ON THE FINDINGS OF COCHRANE COLLABORATION REVIEW OF FIRST-LINE TREATMENTS FOR RELAPSE-REMITTING MULTIPLE SCLEROSIS

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OBJECTIVES: To estimate the cost-effectiveness of Interferon-beta 1a subcutaneous (SC) when compared with Interferon-beta 1a intramuscular (IM) in Portugal, based on the findings published by the Cochrane review of first-line treatments for relapse-remitting multiple sclerosis. METHODS: An Excel-based model estimated the number of relapses and costs incurred by a cohort of 3,000 patients treated with two types of interferon beta-1a. The model evaluated the consequences of each treatment based on the findings of a Cochrane meta-analysis (Filippini 2013). The analysis was performed from a Portuguese NHS perspective, including only direct costs. Costs of relapse were obtained from a local publication (Mateus C, Medicina Clínica 2014; 140: 304-308). The model assumed that one relapse would result in 1,709 relapses and a total cost of 70,480,835 €. For a population with EDSS between 3.5 and 4.5 costs of IM and SC are 72,141,975 € and 72,451,155 €, respectively. Cost-effectiveness ratios were 1,748 € per relapse avoided when EDSS ≤ 3 and 6,115 € per relapse avoided when EDSS > 3.5. CONCLUSIONS: Considering that the cost of a relapse varies between 3,896 € (EDSS ≤ 3) and 5,139 € (EDSS between 3.5 and 4.5) the incremental cost-effectiveness ratios found for interferon-beta-1a SC seem to indicate that the use of IM interferon beta-1a is a cost-effective alternative to the use of IM interferon beta-1a.

PND4

TREATING VERSUS NOT-TREATING OBSTRUCTIVE SLEEP APNEA IN ITALY AND FRANCE: A MARKOV MODEL-BASED COST-EFFECTIVENESS ANALYSIS

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OBJECTIVES: To investigate the cost-effectiveness of not treating or not treating obstructive sleep apnea (OSA) in Italy and France METHODS: A 5-year, 10-state Markov model was used to model disease progression in untreated patients with OSA: diabetes, hypertension, myocardial infarction [MI], post-MI, stroke, post-stroke, atrial fibrillation [AF], heart failure [HF], and death; was developed to compare costs, outcomes, and the number of life-years (LY) of treatment among the Italian National Health Service (INHS) and French National Health System (FNSH) view-point. Health care resources included those related to diagnosis, treatment (CPAP only) and follow-up of OSA: management of hypertension, diabetes, HT, AF, post MI, and post-stroke (per year), MI, and stroke (per episode). Health care resources were valued at Euro [€] 2012 using published sources. RESULTS: After 5 years the number of incremental event-free EYS per patient treated for OSA reached 0.31 (Italy: 4.15 vs 3.84, France: 4.07 vs 3.76). Treating OSA incurred an incremental cost of 1,011.01 and €299.45 per patient for Italy and France, respectively. The ICER of treating OSA is €3212.39 for Italy and €9777.09 for France, respectively. CONCLUSIONS: Treating OSA can be considered highly cost-effective for both the INHS and the FNSH when compared to the acceptability range for incremental cost-effectiveness proposed for Italy (25,000–40,000 €) and for Europe (50,000 €).

PND5

COST-EFFECTIVENESS OF SUBCUTANEOUS INTERFERON-BETA 1A IN A SUB-POPULATION OF MULTIPLE SCLEROSIS PATIENTS [KURTZKE EXPANDED DISABILITY STATUS SCALE] [EDSS] >3.5–5.0

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OBJECTIVES: To evaluate the cost-effectiveness of 44 mcg subcutaneous interferon beta-1a (SCFIlN1a) in patients with multiple sclerosis (MS) with Kurtzke Expanded Disability Status Scale (EDSS) score >3.5–5.0. METHODS: The analysis was performed from a US payer’s perspective. The time horizon of the analysis was 5 years. The decision analytic model was populated with real-world inputs and related assumptions, as well as pivotal placebo-controlled clinical trial data for 44 mcg SCFIlN1a 3 times a week (PRISMS Study). Clinical inputs were obtained for the overall study population that was compared to a subpopulation of patients with Kurtzke EDSS score >3.5–5.0. Disease-modifying drug (DMD) cost was based on 2014 wholesale average cost with consideration of patient copayment in the base case. Sensitivity analyses were performed from a US payer’s perspective. The time horizon of the analysis was 5 years. RESULTS: Model results showed that the mean number of relapses avoided with 44 mcg SCFIlN1a in patients with EDSS >3.5–5.0 was 1.21 per patient over 2 years. The most influential number of relapses avoided for the overall study population was that the estimated probability of hospitalization per seizure and unit cost of hospitalization. The BIA showed that the annual cost of treating uncontrolled epileptic patients with LCM in Greece ranges between €274.9 and €271.5 million, in the primary and secondary analysis as compared to the reported with standard AID (€273.5 and €279.9 million). CONCLUSIONS: LCM appears to be both less costly and more effective compared with standard AED treatment in Greece and results in cost savings ranging between €2.4 and €8.5 million. Study funded by UCB Pharma.

PND6

A COST-EFFECTIVITY ANALYSIS OF SURAL ANTERIOR ROOT STIMULATION (SARS) COMPARED TO MEDICAL TREATMENT IN COMPLETE SPINAL CORD INJURED PATIENTS WITH A NEUROLOGICAL BLADDER

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OBJECTIVES: To estimate the cost-effectiveness of sural anterior root stimulation (SARS, using the Finetech-Brindley device) compared to medical treatment (anticholinergics + catheterization) in complete spinal cord injured patients with a neurological bladder. METHODS: A probabilistic Markov model was elaborated with a 10-year time horizon, one-year cycles and a 2.5% discount rate. Three irreversible states were defined: 1) treatment without urinary complication, 2) surgery for urinary complication (spincterotomy, urinary derivation); 3) death. Reversible states (urinary calculus; Finetech-Brindley device failures) were integrated in the two first irreversible state. The primary analysis was performed on key input parameters such as DMD costs, the number of relapses in untreated patients, the relative risk reduction in clinical relapse rates, the rate of adherence, and the average cost per relapse avoided. RESULTS: Based on model results, the average cost-effectiveness of 44 mcg SCFIlN1a was favorable for both the overall study population and the EDSS >3.5–5.0 cohort.

PND7

COMPARISON OF A MARKOV COHORT MODEL AND A DISCRETE-EVENT SIMULATION FOR ECONOMIC ANALYSES OF TREATMENTS FOR MULTIPLE SCLEROSIS

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OBJECTIVES: Multiple sclerosis (MS) is a disease with lifelong impact, making the cost-effectiveness (CE) of its treatments particularly sensitive to assumptions regarding natural history and structural assumptions, but it is not designed to investigate sensitivity to structural assumptions. The aim of this study was to compare a Markov cohort model (MM) and a discrete-event simulation (DES) model that were based on the same data but developed independently to understand the impact of their structural differences on model predictions. METHODS: A similar population was simulated in the MM and the DES model, aggregated cost and utility estimates were compared over various time horizons. The average expanded disability status scale (EDSS) term was excluded from the DES model, the natural history simulations of the two models agreed more closely. CONCLUSIONS: Structural SA can help quantify the impact of key modeling decisions in this study, a DES and a MM model showed that natural history predictions diverge over long time horizons, in part due to the consideration of disease history in the DES model. A better understanding of the differences between the two model designs helps ensure interpretation of the model results while taking into consideration the assumptions embedded in those designs.

PND8

THE LONG-TERM VALUE OF GLATIRAMER ACETATE FOR THE TREATMENT OF RELAPSING REMITTING MULTIPLE SCLEROSIS IN THE NETHERLANDS

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OBJECTIVES: To evaluate the cost-effectiveness of glatiramer acetate (Copaxone®) as a disease-modifying treatment (DMT) for relapsing-remitting multiple sclerosis (RRMS) in the Netherlands. METHODS: A Markov model followed patients over 50 years through 21 health