and secondary analysis, respectively. Extensive sensitivity analyses indicated that results were robust. The most influential parameters were the utility estimates, 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 analyses, respectively, compared to the respective costs with standard AED (€277.3 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 €8.3 million. Study funded by UCB Pharma.

PND43

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

Silverio N[1], Sequeira L[1], Meletiche D[2]

[1]*Merck SA, Alges, Portugal,* [2]*EMD Serono, rockland, ME, USA*

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, 2000) whereas costs of both drugs were obtained from local official databases (Cat@ logo). Although efficacy was kept constant as Cochrane did not report outcomes based on EDSS, costs of relapse were available for patients with different EDSS values, thus allowing estimation of cost-effectiveness for different types of population. **RESULTS:** According to the model, over a 2 year period and in a population with EDSS ≤ 3, treatment with IM interferon beta-1a will result in a total of 2,228 relapses, and a total cost of 69,572,717€, whereas treatment with SC interferon beta-1a will result in 1,709 relapses and a total cost of 70,480,835€. For a population with EDSS between 3.5 and 4.5 cost values for IM and SC are 72,141,975€ and 72,451,135€, respectively. Cost-effectiveness ratios were 1,748€ per relapse avoided when EDSS ≤ 3 and 595€ per relapse avoided when EDSS was between 3.5 and 4.5. **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 that SC interferon beta-1a is a cost-effective alternative to the use of IM interferon beta-1a.

PND44

TREATING VERSUS NON-TREATING OBSTURICTIVE SLEEP APNEA IN ITALY AND FRANCE: A MARKOV MODEL-BASED COST-EFFECTIVENESS ANALYSIS

Whitehouse JT[1], Da Deppo L[2], Lazzaro C[3], Pedretti RFE[4], La Rovere MT[5], Pepin JL[6], Defaye P[6]

[1]*GfK Market Access, Melton Mowbray, UK,* [2]*Boston Scientific, Milan, Italy,* [3]*Studio di Economia Sanitaria, Milan, Italy,* [4]*IRCCS Fondazione Salvatore Maugeri Tradate, Tradate Milano, Italy,* [5]*IRCCS Fondazione Salvatore Maugeri Montescano, Montescano, Italy,* [6]*Université Grenoble Alpes, Grenoble, France*

OBJECTIVES: To investigate the cost-effectiveness of treating vs. not treating obstructive sleep apnea (OSA) in Italy and France **METHODS:** A 5-year, 10-state Markov model with disease states including; disease and event-free 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 event-free life-years (LYS) of treating vs not treating OSA from the Italian National Health Service (INHS) and French National Health System (FNSH) viewpoint. 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 LYS per patient treated for OSA reaches 0.31 (Italy: 4.15 vs 3.84; France: 4.07 vs 3.76). Treating OSA incurs an incremental cost of €1011.01 and €2998.45per 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).

PND45

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)

Phillips AL[1], Edwards NC[2], Locklear JC[1]

[1]*EMD Serono, Inc., Rockland, MA, USA,* [2]*Health Services Consulting Corporation, Boxborough, MA, USA*

OBJECTIVES: To evaluate the cost-effectiveness of 44 mcg subcutaneous interferon beta-1a (scIFNβ1a) 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 perspective. The time horizon of the analysis was 2 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 scIFNβ1a 3 times a week (PRISMS Study). Clinical inputs were obtained for the overall study population as well as 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 conducted on key input variables to assess their impact on cost per relapse avoided. **RESULTS:** Model results showed that the mean number of relapses avoided with 44 mcg scIFNβ1a in patients with EDSS >3.5–5.0 was 1.21 per patient over 2 years. The mean number of relapses avoided for the overall study population was 0.74 per patient over 2 years. The average cost-effectiveness of 44 mcg scIFNβ1a was estimated to be $107,861 per relapse avoided for the EDSS >3.5–5.0 cohort. The average cost-effectiveness for the overall study population was estimated to be $181,208 per relapse avoided. Sensitivity analyses showed that results were robust to changes in 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 of relapse. **CONCLUSIONS:** Based on model results, the average cost-effectiveness of 44 mcg scIFNβ1a was favorable for both the overall study population and the EDSS >3.5–5.0 cohort.

PND46

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

Bénard A[1], Morlière C[1], Verpillot E[2], Donon L[1], Salmi LR[1], Joseph PA[1], Vignes JR[1]

[1]*CHU Bordeaux, Bordeaux, France,* [2]*Université de Bordeaux, Bordeaux, France*

OBJECTIVES: To estimate the cost-utility of sacral 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 (sphincterotomy, urinary derivation); 3) death. Reversible states (urinary calculi; Finetech-Brindley device failures) were integrated in the two first irreversible states. A systematic review and meta-analysis were performed to estimate transition probabilities and Quality Ajusted Life Years (QALYs). In the perspective of the French Healthcare System, costs were estimated from a published comparative cost-effectiveness research (Neurosurgery 2014; 73: 600), and through simulations using the 2013 French prospective payment system (PMSI) classification. **RESULTS:** In the primary analysis, the cost-utility ratio was 10,647€/QALY gained. At a 30,000€ ceiling ratio the probability of SARS being cost-effective compared to medical treatment was 63%. If the French Healthcare System reimbursed SARS for 200 patients/year the two first years and 50 patients/year during 8 years (anticipated target population) the expected incremental net health benefit would be 222 QALYs, and the expected value of perfect information (EVPI) would be 4,570,000€. The highest partial EVPI is reached for transition probabilities toward urinary calculi (4,420,000€). With discount rates of 1% and 6% the cost-utility ratios were 6,951 and 19,770€/QALY gained, and the probabilities of SARS being cost-effective were 66% and 58%, respectively. **CONCLUSIONS:** Our model shows that SARS using Finetech-Brindley device offers the most important benefit and should be considered cost-effective at a 30,000€ ceiling ratio. Despite a high uncertainty, EVPI and partial EVPI may indicate that further research would not be profitable to inform decision making.

PND47

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

Kansal A[1], Tafazzoli A[1], Leipold R[1], Sarda S[2]

[1]*Evidera, Bethesda, MD, USA,* [2]*Biogen Idec, Weston, MA, USA*

OBJECTIVES: Multiple sclerosis (MS) is a disease with lifelong impact, making the cost-effectiveness (CE) of its treatments particularly sensitive to assumptions embedded in model designs. Traditional sensitivity analysis (SA) can test many 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 of MS that were based on common clinical 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 varying time horizons. The average expanded disability status scale (EDSS) and the distribution of EDSS were also compared over time to study the dynamics of disease progression and treatment effects. **RESULTS:** The two modeling approaches led to different natural history behavior over longer time horizons, even after short-term behaviors were well-aligned, with the DES model predicting slightly fewer life-years (25.9 vs. 26.2 in the MM) but more quality-adjusted life-years (9.6 vs. 8.1 in the MM). These differences reflect slower progression of EDSS in the DES model, particularly to higher EDSS states. When disease history (including a baseline 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 comparison of an MM and a DES 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.

PND48

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

Wilson,LE[1,2], Prüfert A[2]

[1]*Quintiles, Reading, UK,* [2]*Quintiles, Hoofddorp, The Netherlands*

OBJECTIVES: To evaluate the cost-effectiveness of glatiramer acetate (Copaxone®) as a disease-modifying treatment (DMT) for relapsing-remitting multiple sclerosis (RRMS) compared to intravenous [natalizumab (Tysabri®), alemtuzumab (Lemtrada®)] or subcutaneous injectables [interferon-beta-1b (Betaferon®), interferon-beta-1a 44mcg, 22mcg, 30mcg (Rebif-44®, Rebif-22®, Avonex®)] and oral DMTs [fingolimod (Gilenya®), dimethyl fumarate (Tecfidera®), teriflunomide (Aubagio®)]. **METHODS:** A Markov model followed patients over 50 years through 21 health