were used as denominators in the calculation of incremental CE ratios (ICER) are decreased frequencies of mild hypoxia, severe hypoxia and pneumonia. RESULTS: Frequencies of residual NMB were estimated as 51.2% 44.6% and 0.4% in SR, neostigmine and Bridion groups, respectively. Hypoxia rate was calculated as 27.4% and 4% in patients with and without residual NMB. Percentages of pneumonia were 17.2% and 5.9% in patients with and without residual NMB. Percentage of patients without any complication was found to be 88.0% in Bridion group, while it was 73.8% and 73.7% in SR and neostigmine groups. The costs of complications were 126.6% and 114.7% in SR and neostigmine groups, while it was only 34.7% in Bridion group. When medication cost was added, the total cost rose to 114.56. Russell Becker Consulting, Chicago, IL, USA; 2Biogen Idec GmbH, Wellesley, MA, USA

OBJECTIVES: To conduct pharmacoeconomic evaluation of Levodopa/Carbidopa/Entacapone (LCE) compared to standard therapy in Parkinson disease treatment. Standard therapy was presented by Levodopa and Carbidopa. METHODS: The cost-effectiveness study was carried conducted. Effectiveness was measured in DALS.-Time horizon for cost-effectiveness analysis was 2 years. a 3% discount rate was used. 1 EUR = 40 RUB. RESULTS: LCE provided benefits in effectiveness compared to standard therapy. LCE reduced days Incapacity index from 44 to 21 days. Two year pilot study showed that LCE provided 0.83 DALY, than standard therapy presented 0.5. Also administration of LCE reduced daily Levodopa dose on 68 mg. Total annual costs for LCE therapy were 159,938 (3,974 EUR) RUB. Standard therapy total costs varied from 129,113 RUB (3,228 EUR) to 145,422 RUB (3,636 EUR) yearly according to disease progression grade. Indirect costs, including GDP losses due to temporary disability and payments for temporary disability, were 14,172 RUB (359 EUR) for LCE and 30,113 RUB (753 EUR) for standard therapy. The cost-effectiveness ratio for LCE was 191,492 RUB (4,787 EUR) per DALY, than standard therapy was 258,326 RUB (6,458 EUR) per DALY. CONCLUSIONS: LCE demonstrates lower cost-effectiveness ratio (191,492 RUB) compared to standard Parkinson disease treatment (258,326 RUB), therefore LCE has an advantage over standard therapy in terms of pharmacoeconomic evaluation.

The impact of cohort selection on cost-effectiveness results in multiple sclerosis

Becker RV, Dembélé C1

Rusell Becker Consulting, Chicago, IL, USA; 1Bogen Idec GmbH, Wieselsley, MA, USA

OBJECTIVES: Adherence to cost-effectiveness analytic guidelines requires careful assessment of trial results to ensure the most appropriate cohort data selection. This study examines the impact of cohort selection on the results of the Goldberg, et al. 2009 cost-effectiveness study of disease-modifying therapies (DMTs) in multiple sclerosis (MS). METHODS: Using intent-to-treat (ITT) two-year data from pivotal trials of interferon-beta-1a (IFN-b-1a) and subcutaneous dopamine agonists (DAs) in patients with advanced Parkinson disease (PD), the analysis was performed using a Markov model. The model allows to calculate and compare the incremental cost-utility ratios for standard antiepileptic drug (AED) therapy with and without adjunctive lacosamide in patients with uncontrolled partial-onset seizures. METHODS: The model simulated the treatment pathway of a hypothetical cohort of 1000 patients over 2 years from the perspectives of the National Health Service (NHS) in Scotland and the Spanish Healthcare System (SNS) in 2008. a decision tree was split into four phases of six months each during which patients can become seizure free, experience a seizure reduction, (responder defined as a 50% reduction in seizures over the last 3 months of drug use), or withdraw due to non-response. The standard therapy arm included carbamazepine, lamotrigine, levetiracetam, topiramate, and valproate. The likelihood of being in a particular health state has been estimated from clinical data. The cost of general practitioner visits, outpatient visits, hospitalizations and emergency department visits were included. Costs and utility values associated to various health states were taken from the published literature. RESULTS: Lacosamide adjunctive therapy was associated with 6730 avoided seizures and a gain of 0.7 quality adjusted life-years (QALYs), compared to the standard therapy arm within the two year timeframe. Treatment with lacosamide was associated with a cost of £113 and €107 per seizure avoided, and £20,017 and €22,771 per QALY gained versus standard therapy in Scotland and Spain, respectively. Results calculated for 6, 12- and 18-month follow-up showed respective incremental cost-effectiveness ratios of £3,679, £2,140, and €20,998 in Scotland and €21,779 in Spain. Using a willingness-to-pay threshold of €30,000 per QALY, 40% of the simulations in Scotland and 74.2% in Spain fell below this value after 2 years of treatment. CONCLUSIONS: Lacosamide was shown to be a cost-effective adjunctive treatment in patients with uncontrolled partial-onset epilepsy in Scotland and Spain.

Cost utility analysis of orphan drugs: Case Study of Duodenal Levodopa Infusion versus Standard Treatment in Patients with Advanced Parkinson's Disease in Sweden

Will M1, Gradl B2

1The Lund, Sweden; 2Abbott Products Operations AG, Allschwil, Switzerland

BACKGROUND: Advanced Parkinson's disease (ADP) severely impacts the quality of life both patients and their caregivers and is associated with high healthcare costs and societal costs. The treatment options for those patients are limited. Duodenal levodopa infusion (DLI), an orphan drug, has shown to restore symptom control and to improve QoL substantially for both patients and their carers. OBJECTIVES: To evaluate the cost-utility of DLI versus standard treatment (including oral treatment and subcutaneous dopamine agonists) in patients with advanced PD in Sweden. METHODS: A stochastic Markov-based simulation model was developed. Health was described by 12 health states reflecting 4 categories of “OFF” time and 3 severity manifestation 20–40 years). MS may lead to permanent disability and early retirement even in young adults. The purpose of this analysis was to provide an economic assessment of relapsing-remitting MS-treatment with Natalizumab versus Interferons and Copolymer in 4 European countries (Austria, Czech Republic, Slovakia, Slovenia), MEDECO®). The analysis was performed using a Markov model. The model allows for treatment switch due to relapse. Efficacy assessment was based on the outcome measure “relapse-free patients”. Costs were captured for the year 2010. Resource use was determined from results of a survey conducted by the Austrian MS Society and accurately reflects the therapeutic cost structure in the countries. RESULTS: Natalizumab was determined via country-specific research. Where country specific data could not be captured, Austrian data was adjusted via Purchasing Power Parities (PPP). The study time horizon was 2 years. The analysis was performed from the perspective of the National Health Service (NHS) in Italy and Slovenia the average cost of the therapy algorithm Natalizumab amount to €3,813,835 per patient within the time horizon of 2 years versus €2,289,896 (Interferon) and €21,256 (Copolymer), a patient successfully treated with Natalizumab accounts for €36,525 compared to €70,190 (Interferon) and for €87,555 (Copolymer). In Slovakia a relapse-free patient values €10,575 (Natalizumab) versus €58,843 (Interferon) and €19,921 (Copolymer), a relapse-free patient values €39,108 (Natalizumab) versus €66,202 (Interferon) and €84,207 (Copolymer). In Austria a relapse-free patient values €56,823 (Natalizumab) versus €71,906 (Interferon) and €89,591 (Copolymer). CONCLUSIONS: In Czech Republic, Slovenia, and Austria Natalizumab is more cost-effective than Interferon resp. Copolymer 1 therapy. Switching to effective and more expensive alternatives does not account for higher health care costs.
for Sweden [1]. Sensitivity analysis was associated with ICERs ranging up to SEK 900,000 ($93,856) per QALY gained. CONCLUSIONS: Due to the data limitations, HE modeling in the orphan drug setting is challenging. Analysis could be performed as requested by Sweden’s Dental and Pharmaceutical Benefits Agency (TLV), however, providing evidence that health benefits can provide good value for money even for an orphan population. DLL received a positive reimbursement recommendation by the TLV. [1] Persson U, Hjelmgren J (2003).

PND28
COST-UTILITY ANALYSIS OF ROTIGOTINE TRANSDERMAL PATCH IN EARLY-STAGE PARKINSON’S DISEASE IN SCOTLAND
Benholdt H, Gunn A
UCB Pharma S.A, Brussels, Belgium
OBJECTIVES: To evaluate the cost-effectiveness of rotigotine transdermal patch as monotherapy in early-stage Parkinson's disease (PD) compared to ropinirole and other dopamine agonists (DA) from the NHS perspective in Scotland. METHODS: A decision-analytic model was developed, based on treatment of an early-stage PD patient (Hoehn and Yahr-stage 2); treatment arms were rotigotine, ropinirole, and a DA practice comparator including ropinirole, cabergoline and pramipexole. 5-year and 10-year time horizons were considered for patients who remained on monotherapy only. The economic evaluation is a cost-utility analysis with health outcomes expressed in Quality Adjusted Life-years (QALYs) gained in 2006. Costs related to drug acquisition, PD severity, falls, occurrence of motor complications and other complications/ adverse events/co-morbidities were considered in the model. Efficacy and safety data were estimated with a meta-analysis. Quality of life was measured using EQ-5D. Data on medical resource use was obtained via expert interviews and literature review. Costs of care were discounted at the rate of 3.5%. RESULTS: After 5 years, treatment with rotigotine transdermal patch resulted in an estimated 2.30 QALYs, slightly higher than with ropinirole (2.26) and the DA practice comparator (2.27). 10-year outcomes were 3.22, 3.17 and 3.17 QALYs for rotigotine, ropinirole and DA practice comparator, respectively. Total costs for rotigotine, ropinirole and DA practice comparator were £34,748, £37,694 and £36,459 respectively after 5 years and £79,477, £84,120 and £81,631, respectively after 10 years. With a willingness-to-pay of £20,000 per QALY gained, there is a 90% probability that rotigotine is cost-effective relative to ropinirole, and a 85% probability of cost-effectiveness relative to the DA practice comparator for both 5-year and 10-year time horizons. CONCLUSIONS: Based on the model, rotigotine may be considered a dominant strategy over ropinirole and DA practice comparator in the treatment of early-stage PD at 5-year and 10-year time horizons.

PND29
COST-UTILITY ANALYSIS OF RIZATRIPTAN VERSUS (GENERIC) SUMATRIPTAN IN SWEDEN
Lundberg J, Golden WM, Insinga RP
1Merck & Co., Inc., Upper Gwynedd, PA, USA
2Merck & Co., Inc., Whitehouse Station, NJ, USA
3Merck & Co., Inc., Sollentuna, Sweden
OBJECTIVES: To evaluate the cost-effectiveness of rizatriptan 10 mg was found to have a cost-effectiveness ratio compared to QALY. SEK, and greater QALYs for rizatriptan 10 mg. Inclusion of health care costs only, recent head-to-head trials of the comparators). As both sumatriptan 50 mg and published model were the substitution of Swedish health care and productivity costs, treatment costs and effects of rizatriptan 10 mg versus (generic) sumatriptan in a single treatment pathway of a hypothetical cohort of 1,000 patients over two years was split into four phases of six months each during which patients can become seizure free, experience a seizure reduction (defined as ≥50% reduction in seizures), or withdraw due to non-response. The antiepileptic drugs (AEDs) included in the standard therapy arm were extracted from the pivotal trials and included carbamazepine, lamotrigine, levetiracetam, topiramate and valproate. Health state probabilities, seizure frequency and utility values were taken from lacosamide trials or from the literature. Costs of general practitioner visits, outpatient visits, hospitalizations and emergency department visits were included. Resource use was estimated by a Belgian panel of eight neurologists. Costs were discounted at a rate of 3% and consequences at a rate of 1.5%. RESULTS: Over a 24-month period, standard AED therapy plus lacosamide led to a reduction of 7 seizures, an increase of 0.038 quality-adjusted life-years, and a cost decrease of €619 per patient as compared with standard therapy alone. Results were also calculated for a 6-, 12- and 18-month follow-up. Lacosamide plus AED therapy dominated versus standard therapy alone. Using a willingness to pay of €30,000 per quality-adjusted life-year, the net monetary benefit of standard antiepileptic drug therapy plus lacosamide amounted to €4,754. The probability of standard AED therapy plus lacosamide being cost-effective was 97.3% at 6 months, 99.8% at 12 months, 99.9% at 18 months, and 100% at 24 months. CONCLUSIONS: In epileptic patients who are difficult to treat with other AEDs, standard AED therapy plus lacosamide appears to be a cost-effective alternative.

NEUROLOGICAL DISORDERS – Patient-Reported Outcomes Studies

PND31
IMPACT OF AN ADHERENCE PROGRAM, RUN AS A TELEPHONE INTERVENTION, ON COMPLIANCE WITH SCUTANOUS LACOSAMIDE ANTI-EPILEPTIC DRUG THERAPY IN PATIENTS WITH UP TO 50% DROPCOUT
Papademos E, Levin R, Tsuenemann M, Lammers V, Aubert RE
1Medco Health Solutions, Franklin Lakes, NJ, USA
2Europa Apotheek Venlo B.V, Venlo, The Netherlands
OBJECTIVES: Quasi-experimental analysis to determine the effect of an opt-in telephone intervention on adherence in patients using scutaneous interferon β-1a, which is indicated for relapsing-remitting multiple sclerosis. Drop-out reasons, side-effects, and expectations of therapy are described. METHODS: Customers of a mail-order pharmacy that services Germany who ordered scutaneous interferon β-1a were targeted for enrollment in a free program that included an initial counseling call, optional e-mail reminders for the next doctor's consultation and prescription, and long-term counseling calls. Patients enrolled in the program for 12 months were included in the analysis and compared to patients that did not enter the program over the same time period. Proportion of days covered (PDC) was calculated for each group and compared using analysis of variance. Enrollees in the programs were administered a questionnaire at the initial welcome call addressing their expectations of therapy, and again during each counseling call regarding their compliance behavior, and side effects. RESULTS: Patients in the adherence program showed an unadjusted PDC 8.2% higher than the control, F(1,247) = 13.44, p = 0.0003. One program patient switched drugs compared to six control group patients. A total of 21% of enrolled subjects reported missing at least one dose. Side-effects included pain/inflammation at the site of injection (24.41%), fatigue (20.73%), headaches (17.06%), and flu-like symptoms (9.71%). Exacerbations were reported by 15.7% of patients. Patients had expectations that therapy would prolong the distance between exacerbations (23.36%) and slow the progression of disability due to the disease (21.28%). CONCLUSIONS: Actively recruiting patients into an optional adherence program significantly increased the compliance rate for relapsing-remitting multiple sclerosis patients using scutaneous interferon β-1a. Side effects experienced by enrolled patients were consistent with the package insert. Limitations include a potential bias between patients that agree to the program vs. those that do not, as well as the lack of additional questionnaire data from the control group.

PND32
INFLUENCE OF AGE ON REFILL-ADHERENCE RATES OF ANTI-EPILEPTIC DRUGS IN SOUTH AFRICA
Van Zyl T, Lubbe MS, Serfontein JHP, Rakumakoe DM
1North-West University, Potchefstroom, South Africa
2Sefako-Phatlane Johannesburg Hospital, South Africa
OBJECTIVES: To investigate the possible influence of age on the refill-based adherence rates of anti-epileptic drugs. METHODS: A retrospective drug utilization review was performed on medicine claims data of a pharmacy benefit management company in South Africa. Refill-based adherence rates were calculated for 6,345 anti-epileptic drugs that were prescribed more than once during a four-year period (January 1, 2005 to December 2008). The refill-based adherence rate was calculated per trade name by using the following equation: Refill-Adherence rate = (total number of days of anti-epileptic drugs supplied—days supplied at the last refill)/(date last claimed—date fi rst claimed); [1] Persson U, Hjelmgren J (2003).

RESULTS: Only 30.5% (n = 19 635) of anti-epileptic drugs had refill-adherence rates between 90% and 110%. The majority of anti-epileptic drugs (54.9%; n = 37 962) had refill-adherence rates below 90% that accounted for 39.2% (n = 79 599 838) of the total cost of all anti-epileptic drugs (N = 146 863 735) included in these calculations. Anti-epileptic drugs with refill-adherence rates >110% (10.7%; n = 6 860) accounted for 6.7% (R9 782 864) of the total cost of all anti-epileptic drugs. The average refill-adherence rate decreased with nearly 10% from