management in adult patients with refractory epilepsy in Spain. 

METHODS: A cross-sectional and retrospective study was designed. Male and female adult patients (above 18 years) with refractory epilepsy were enrolled in neurology medical settings between March and September 2005 in Spain. Health care and non-health care resources were collected and total costs calculated according with published prices for year 2005. Quality-of-life, level of anxiety and depression, health state, concomitant medications and comorbidity history and treatment of epilepsy were also recorded. A secondary analysis including a forward stepwise multivariate regression model exploring possible explicative variables was performed. RESULTS: Seven-hundred-sixty-two consecutive patients [728 evaluable (95.5%); 50.8% males, 40.5 (13.5) years, 24.3 (13.4) years of evolution] were included through the country at epilepsy units, neurology outpatient clinics and hospital outpatient clinics. A moderate explicative model was built; adjusted R-square = 0.24 (F = 26.6, p < 0.0001). Presence of mental retardation and social function domain of the QOLIE-10 were the variables with most explicative weight of total cost in these patients; standardized estimates of 0.303 and 0.175, respectively [β coefficient (standard error) of 6675.0 (826.8) and 53.5 (12.7), p < 0.001 in both cases respectively], Health status on a 0–100 mm-VAS (standardized estimate; 0.142), need for additional non-neurological hospital assistance (0.118), previous episode of secondarily generalized seizures (0.102), health care at neurology outpatient clinics (0.083), and documented etiology of epilepsy (0.096) were all found to be significant explicative variable, all of them p < 0.05. 

CONCLUSIONS: This secondary analysis found a broad sources of drivers of costs in patients with refractory epilepsy in Spain, with mental retardation and social function domain of QOLIE-10 (the higher the score the higher the cost) being responsible for a substantial part of total cost.

**Abstracts**

**PND8**

**COST-EFFECTIVENESS OF TREATING RESTLESS LEGS PATIENTS WITH PRAMIPEXOLE COMPARED TO NO TREATMENT IN SWEDEN**

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OBJECTIVE: To estimate the cost-effectiveness of pramipexole versus no treatment in patients with moderate to very severe restless legs syndrome (RLS) in Sweden taking the societal perspective. METHODS: A cost-utility Markov model was developed that included five health states (no, mild, moderate, severe and very severe RLS) based on the International RLS Study Group Rating Scale scores. The probability of moving between health states was derived from the phase III, randomized, double-blind pramipexole trials in RLS. To comprehensively estimate quality-adjusted life years (QALYs) several approaches were taken to map the IRLS to the EQ-5D including Delphi panel, patient survey and published literature. Treatment patterns were estimated with a physician expert panel. 2005 unit costs were derived from Swedish government sources. Both one-way and probabilistic sensitivity analyses were conducted. RESULTS: Over a one-year time period, treatment with pramipexole reduced overall costs by SEK 1191 (approximately €128) per patient and was associated with a gain of 0.035 QALYs relative to no treatment when using utilities from the Delphi panel. Pramipexole’s dominance from the societal perspective against the no treatment alternative was robust to sensitivity analysis. Sensitivity analyses included variation in health care provider costs, different utility assumptions, and an extension of the model to a five-year time period. CONCLUSIONS: Active treatment of RLS with pramipexole is preferred over no treatment for patients with moderate to very severe RLS in Sweden.

**PND9**

**COST UTILITY ANALYSIS OF LEVODOPA-CARBIDOPA VS LEVODOPA-CARBIDOPA-ENTACAPONE IN PARKINSON DISEASE IN MEXICO**

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OBJECTIVE: To estimate the cost-utility of levodopa-carbidopa and levodopa-carbidopa-entacapone in the treatment of Parkinson disease in the Mexican Institute of Social Security in Mexico. METHODS: Cost-utility analysis. Use of resources information was obtained from a retrospective cohort and was validated by a Mexican expert panel. Costs were estimated from financial information from IMSS, and are reported in US 2006 dollars. The source of utility information, measured in QALYs, and transition probabilities was a meta-analysis and a Mexican expert panel. Study perspective used: public health services provider (IMSS); five years time horizon, 3% real discount rate. A decision tree with a Bayesian approach and a Markov model were used. Mean cost-utility, incremental ratios and net health benefits were estimated. The sensitivity analysis included one-way, two-way, threshold and probabilistic with Monte Carlo simulation. RESULTS: Cost per utility unit for levodopa-carbidopa was $5623 and for levodopa-carbidopa-entacapone, $5168. Incremental cost-utility ratio using levodopa-carbidopa as a comparator was $1585. Independently of WTP, levodopa-carbidopa-entacapone had larger net health benefits than levodopa-carbidopa. In the five years analysis, levodopa-carbidopa-entacapone showed 12.8% more utility in relationship to levodopa-carbidopa, with 3.5% more costs. The cost per utility unit with levodopa-carbidopa-entacapone had an accumulated decrease of 18.4% during the period of time analyzed. The acceptability curves and the component analysis of the output graph showed that with the actual cost that the IMSS is investing in the treatment of Parkinson disease, the cost-utility proportion of levodopa-carbidopa-entacapone would be 80%. CONCLUSIONS: Levodopa-carbidopa-entacapone had the lowest cost per unit of success in the treatment of patients with Parkinson disease compared with levodopa-carbidopa. Cost per additional utility unit of levodopa-carbidopa-entacapone was $1585. At the end of the follow-up levodopa-carbidopa-entacapone reduced annual health care costs to a greater extent than levodopa-carbidopa and provided better quality of life per patient.

**PND10**

**A FUNCTIONAL ANALYSIS OF THE RELATIONSHIP BETWEEN AGE AND MIGRAINE IN THE UNITED STATES OF AMERICA**

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OBJECTIVE: The objective of this study was to evaluate the indirect evidence of menstrual migraine headache by examining migraine headache prevalence as a function of age. Investigators have reported that the risk of migraine headache decreases with age but have not fully described the nature of the decline based on sex. METHODS: This study was based on data from the adult sample of the 2003 National Health Interview Survey (NHIS). The study sample consisted of 17,394 females and
OBJECTIVES: Phase III clinical trials showed novel drugs introduced in the 1990s modified the natural history (NH) of relapsing-remitting onset definite multiple sclerosis (MS). A Nova Scotia Phase IV “real world” observational study confirmed the short-term effectiveness of these disease modifying therapies (MS-DMT), measured by Extended Disability Status Scale (EDSS) increase avoided per patient per year. This analysis projects these short-term results over a 20-year horizon to estimate long-term health outcomes of MS-DMT. METHODS: A probabilistic Markov model estimated EDSS progression for NH and MS-DMT cohorts with relapsing-remitting onset MS over a 20-year horizon. The model was based on 591 patients receiving MS-DMT from the Dalhousie MS Research Unit, stratified into three subgroups by final classification and disability severity: 1) mild relapsing-remitting MS (RRMS), 2) mild secondary-progressive MS (SPMS) and 3) mild or moderate SPMS. Health outcomes were measured as EDSS disability adjusted life years (DALYs) avoided per patient compared to NH. Relative benefit was defined as DALY burden avoided relative to expected DALYs given NH. The baseline analysis was a “best-case” scenario with full compliance for 20 years. RESULTS: The model found statistically significant benefit in all three subgroups. Among the mild severity subgroups, there were 1.7 (95% CI: 1.2–2.2) DALYs avoided among RRMS patients and 2.6 (1.5–3.6) DALYs avoided among SPMS patients, for a combined benefit of 1.9 (1.2–3.2) DALYs avoided, or a 42% (20%–91%) relative benefit. Among the mild or moderate SPMS patients, there were 1.1 (0.3–1.9) DALYs avoided (14% 3–30%). Overall, the combined cohort had a benefit of 1.5 (0.5–2.1) DALYs avoided (29%; 6–63%). CONCLUSIONS: MS-DMT can have significant long-term benefit in terms of DALYs avoided, particularly in mild subgroups. This analysis is the first to model long-term change in mean EDSS, rather than delayed time to specific EDSS endpoints, and may help guide MS-DMT coverage decisions.

OBJECTIVES: To describe and compare the domains and psychometric properties of selected Patient Reported Outcomes (PROs) instruments, neuropsychological and cognitive, developed and/or used in patients with Parkinson’s disease (PD). METHODS: A systematic literature review of published studies was conducted using MEDLINE (1990–2006), EMBASE (1990–2006) and the Mapi Research Trust databases. Only studies describing the development or use of a referenced instrument assessing Health-Related Quality Of Life (HRQL), Activities of Daily Living (ADL), Fatigue/sleep, Neuropsychological and cognitive measures were included in the review. Instruments were selected if they were specifically developed for Parkinson’s disease, or used in clinical trials and for which psychometric properties were available. Caregiver reports were not included. RESULTS: Sixty instruments were identified and 35 were selected for in-depth review. Seven questionnaires measured HRQL. 2 generic and 5 PD specific. Of these, the PDQUALIF and the PDQ-39 are well validated but are not always sensitive to changes in RCTs. Four instruments assessed ADL/disability, with the UPDRS being generally used as a primary endpoint in RCTs. Six instruments measured sleep or fatigue, most of them have been validated in PD patients and are sensitive to change. Two symptoms (motor & non-motor) scales were selected, but lack evidence of good psychometric properties. Four psychological instruments and 12 neuropsychological/cognitive instruments were also selected. Most of these were not validated in PD patients and failed to demonstrate their sensitivity to change in clinical trials. CONCLUSIONS: The selected PRO instruments are very heterogeneous in their levels of validation, psychometric properties and sensitivity to change in clinical trials, depending on the dimension measured. For HRQL, ADL/Disability and Sleep, reliable measures are available whereas advances are still needed to assess symptoms, psychological well-being or cognition.