corticosteroid pulse and plasmapheresis may help in acute attacks of NMO. Further well designed, adequately powered studies are required in this context.

PND14

VARIATION IN STATE-LEVEL VS. NATIONAL INCIDENCE IN RARE GENETIC DISEASE: A MONTE CARLO SIMULATION TO EXAMINE SAMPLING VARIATION AS A PRIMARY EXPLANATION IN CONGENITAL ADRENAL HYPERPLASIA

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OBJECTIVES: The cost-effectiveness of CAH screening (a state-level policy) was assessed by Yoo and Grosse (2009) using national incidence (NATL). Incidence of rare genetic diseases often varies geographically, however, it is likely that some state variation is due to sampling error. This research assesses the extent of the sampling error explanation through a series of simulations. **METHODS:** We obtained actual state-level incidence (ASI) for the 50 US states plus DC for 2006. For the simulation we assumed that state equaled national incidence and constructed a Beta distribution with alpha parameter equaling predicted state cases, and Beta parameter equaling state births minus predicted cases. We then ran a Monte Carlo simulation of 1000 iterations and calculated the proportion of iterations for which the incidence draw was more extreme than the ASI (i.e. draw > ASI if ASI > NATL or draw < ASI if ASI < NATL). Small numbers of iterations more extreme than the ASI are consistent with the ASI not equaling NATL. Extreme was defined as less than 5% of draws in the simulation less than the ASI (if ASI< NATL) or greater than the ASI (if ASI > NATL). **RESULTS:** ASI per 1000 births ranged from 0 to .343 (median, .038). There were 21 states with ASI < NATL (including 13 values of 0) and 25 states with ASI > NATL. Of the 46 states reporting ASI, 21 (47%) had an "extreme" ASI by our definition. **CONCLUSIONS:** State incidence appears to be "extreme" vs the national average in a large number of states and, therefore, does not seem to be explained by sampling error alone. As a difference in incidence may affect cost-effectiveness, further exploration using ASIs instead of a national average may be beneficial for directing state-level screening policy.

PND15

SOCIAL DEMOGRAPHIC CHARACTERISTICS AND DIRECT MEDICAL COSTS FOR PATIENTS WITH PARKINSON'S DISEASE IN KOREA : BIG DATA ANALYSIS FROM THE NATIONAL HEALTH INSURANCE CLAIMS DATASET

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OBJECTIVES: The research is to analyze social demographic characteristics and health service use nature of Parkinson's disease in Korea by using Korean National Health Insurance Claims dataset (HIRA-NPS 2013), which is one of the secondary sources of health and medical treatment provided by reimbursement authority, and to measure a direct medical costs of Parkinson's disease. **METHODS:** Patients with primary or secondary disease code for Parkinson's Disease according to Korean Standard Classification of Disease (KICD-10 code : G20) are selected from National Patients Sample Dataset. The characteristics of age, sex, length of stay for inpatients, the number of outpatient visit and medical cost were analyzed based on the patient dataset extracted. SAS 9.2 (SAS Institute Inc., Cary, NC, USA) was used for statistical analysis. **RESULTS:** The number of patients with Parkinson's disease for the analysis was 4,137, and that of claims cases for 12 months was 34,259. The average age of the patients was 71.6 years old and the female patients composed 60.11%, which was about 1.5 times that of the male patients. The prevalence rate of Parkinson's disease per 1,000 populations was 3.54 in 2013. Based on 1-year claims dataset, outpatient visit days were 9.83 and inpatient hospitalization days were 25.3. The annual direct medical costs were USD 487 for an outpatient and USD 10,429 for an inpatient. **CONCLUSIONS:** As the result, the Parkinson's disease is the economic burden in aging society in Korea. The limitation that the sample data used for the research is smaller than the raw data should be considered. Therefore further analysis on Parkinson's disease in aging society is needed.

PND16

FORECASTING THE PREVALENCE OF STATUS EPILEPTICUS AND ITS SUBTYPES IN EUROPE, 2015–2024

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OBJECTIVES: To estimate the prevalence of status epilepticus (SE), refractory status epilepticus (RSE), and super-refractory status epilepticus (SRSE) in five major European Union (5EU) markets (France, Germany, Italy, Spain, and the United Kingdom) using an incidence-survival model. **METHODS:** Yearly survival data for each SE etiology (acute symptomatic, progressive symptomatic, remote symptomatic, and idiopathic/cryptogenic) were extracted from published research. Incident cases were calculated for each etiology beginning with 1995, based on market-specific published rates. Applying the survival proportions and incidence estimates to the model for each etiology, we calculated an overall estimate of the prevalence of SE. RSE and SRSE prevalent cases were assessed as proportions of the total number of prevalent SE cases using published values. **RESULTS:** We estimated the prevalence of SE to be 18.4 cases per 10,000 population in the 5EU, resulting in 590,264 cases in 2015 and increasing to 603,951 in 2024. The calculated prevalence ranged from 17.2 cases per 10,000 (Germany) to 19.7 cases per 10,000 (Italy). The prevalence of RSE in the 5EU was 4.5 per 10,000, resulting in 145,205 cases in 2015, increasing to 148,572 in 2024. SRSE prevalence in the 5EU was 1.8 per 10,000, resulting in 59,027 cases in 2015, increasing to 60,395 in 2024. **CONCLUSIONS:** To our knowledge, this is the first attempt to calculate the prevalence of SE and its subtypes for all ages in Europe. Estimating the prevalence of SE, RSE, and SRSE using population-based epidemiological methods is challenging because of the variability of SE disease definitions and the unpredictable nature of mortality due to SE. Our incidence-survival model provides an alternative and effective method to assess the prevalent population. Considering the high costs associated with treatment and hospitalization of SE, RSE, and SRSE patients, these estimates are necessary to quantify the burden of disease in Europe.

NEUROLOGICAL DISORDERS – Cost Studies

PND17

GLATIRAMER ACETATE 40 MG/ML THREE TIMES A WEEK FOR THE TREATMENT OF RELAPSING FORMS OF MULTIPLE SCLEROSIS: POTENTIAL COST BENEFITS OF A REGIMEN WITH INFREQUENT INJECTIONS WHICH MAY MINIMISE SWITCHING TO THE NEWLY-INTRODUCED FIRST-LINE AND SECOND-LINE DISEASE MODIFYING THERAPIES

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OBJECTIVES: The newly-introduced glatiramer acetate (GA; COPAXONE®) 40 mg/ml three times a week maintains the known efficacy and safety of GA 20 mg/ml once-daily but requires around 200 fewer injections per year (60% fewer) for people treated for relapsing forms of multiple sclerosis (MS). An economic model with a five-year time horizon estimated the financial impact to the Spanish healthcare system of reduced switching from GA-based regimens to more expensive newly-introduced first-line disease modifying therapies (DMTs) and the second-line DMTs. **METHODS:** The eligible population was based on 2014 Spanish MS incidence rates, with the proportion receiving DMTs calculated using market research data. Medication costs were based on known Spanish prices, while treatment initiation, administration and monitoring costs were calculated from published Spanish sources and Summary of Product Characteristics documentation. Switching rates and future treatment patterns were based on manufacturer's projections. **RESULTS:** An estimated 5,084 people with MS received GA 20 mg/ml once-daily in Spain in 2014 (12.1% of those receiving DMTs) and were assumed to switch to more expensive newly-introduced first-line and second-line DMTs at an annual rate of 8%. Assuming these people received GA 40 mg/ml three times a week instead, and – due to requiring fewer injections – switched at an annual rate of 5%, total expenditure on DMTs and related costs was reduced by between €5.9 million and €7.2 million annually, with savings totalling €32.8 million over five years: a 21% reduction in total expenditure related to DMTs included in the model, compared with GA 20 mg/ml once-daily. Savings were primarily driven by lower acquisition costs of GA compared with other DMTs, and also from lower initiation, administration and monitoring requirements. **CONCLUSIONS:** Introducing GA 40 mg/ml three times a week may limit switching from GA to more expensive newly-introduced first- and second-line DMTs, potentially generating cost savings.

PND18

BUDGET IMPACT OF PERAMPANEL FOR THE TREATMENT OF PATIENTS WITH PARTIAL-ONSET SEIZURES (POS) IN RUSSIA

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OBJECTIVES: The objective of this study was to estimate the incremental budget impact (BI) of utilizing perampanel to treat partial-onset seizures (POS) in patients who are 12 years of age and older in Russia. **METHODS:** The incremental BI was estimated by comparing the cost of POS seizures with and without perampanel. Direct (drugs, healthcare provider visits, emergency room visits, hospitalizations) and indirect (overall work impairment) costs were included. The model was developed from a societal perspective. The time horizon is five years. Costs are reported in rubles (RUB). **RESULTS:** An estimated 351,582 patients ages 12 years and older are treated for POS in Russia each year. Approximately 53% are refractory (experiencing persistent seizures despite current treatment). The market share uptake of perampanel in POS patients is estimated to be 3%, 5%, 10%, 15% and 20%, in years 1 to 5, respectively. During these five years, the adoption of perampanel is projected to increase overall costs by 305M, 510M, 1,022M, 1,537M and 2,055M RUB, respectively. Due to seizure reductions with perampanel, 27% of the drug cost increase (5,428M RUB) over 5 years is offset by the lower utilization of direct medical resources (RUB -25M) and lower overall work impairment (RUB -1,450M), yielding an overall BI of 2.5% over 5 years. **CONCLUSIONS:** With a budget impact of only 2.5% over a period of 5 years and demonstrated efficacy benefits in refractory POS patients (63% median reduction in secondarily generalized seizures and 13% seizure freedom rate), perampanel should be considered a valuable treatment.

PND19

COST OFFSETS ASSOCIATED WITH REBIF USE IN FIRST-LINE RRMS: AN ANALYSIS BASED ON THE COCHRANE COLLABORATION REVIEW AND REAL-WORLD PERSISTENCE DATA

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OBJECTIVES: To project the number and costs of relapses and escalations to second-line therapy over 2 years for subcutaneous (SC) interferon beta (IFNβ)-1a (Rebif®), intramuscular (IM) IFNβ-1a, IFNβ-1b, and glatiramer acetate (GA) in the treatment of first-line relapsing-remitting multiple sclerosis (RRMS) from the perspective of the UK National Health Service (NHS). **METHODS:** A four-state (initial therapy, alternate first-line therapy, second-line therapy [natalizumab], and discontinuation) Markov model was constructed to simulate a cohort of 1,000 newly-diagnosed RRMS patients. Transition probabilities were based on real-world persistence data from the NHS and a patient treatment flow study. Risk of relapse was linearly interpolated based on 2-year data from a Cochrane Review network meta-analysis. The cost of a relapse was sourced from the literature and inflated to 2014 GBP. Drug acquisition costs were sourced from the British National Formulary. Administration costs were sourced from a NICE costing template. One-way sensitivity analyses were performed to test the robustness of the model results. **RESULTS:** Treatment with SC IFNβ-1a is projected to avoid 94, 7, and 7 additional relapses compared with IM IFNβ-1a, IFNβ-1b, and GA, respectively, resulting in cost savings of £279,460, £20,877, and £20,877 over 2 years in a hypothetical cohort of 1,000 newly-diagnosed RRMS patients. Treatment with