QALY gained. However, SA results indicate that the ICER drops below this threshold when most current clinical practice at the cited center is considered. Moreover, SA results suggest potential ways to optimize the current clinical pathway in order to reduce procedure costs even further.

PND54

LONG-TERM COSTS AND CONSEQUENCES OF PATIENTS WITH FAMILIAL CHYLOMICRONEMIA SYNDROME – A SIMULATION MODEL APPROACH

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BACKGROUND: Familial chylomicronemia syndrome (FCS) is a rare genetic disorder characterized by deficiency of lipoprotein lipase, causing accumulation of chylomicrons. An estimated 0.1-0.2 per 100,000 people has FCS worldwide. FCS patients present massively elevated triglyceride levels (typically >2,000 mg/dL), resulting in increased risk of recurring acute pancreatitis. Standard triglyceride lowering medications are ineffective for FCS patients, who rely on restrictive low fat diet to control their triglyceride. There is limited literature about long-term progression, the burden of illness or consequences of acute pancreatitis for FCS. **OBJECTIVES:** To estimate long term disease progression, costs and consequences of FCS. **METHODS:** An individual Monte Carlo simulation model was built to track disease progression of a cohort of FCS patients with a mean age of 37.8 years, 60% male, and a mean triglyceride level of 2,741 mg/dL. The model projected the number of acute pancreatitis events, mortality and medical costs. Benefits of a hypothetical triglyceride reduction intervention were assessed. **RESULTS:** With standard diet control, the average life expectancy of the studied cohort was estimated to be 16.45 years. These patients were expected to experience 10.16 episodes of acute pancreatitis during their lifetime, resulting in 80.7 inpatient days. The discounted lifetime cost of acute pancreatitis was projected to be $154,126 per patient. The cumulative mortality due to acute pancreatitis was estimated to be 54.3%. Should an intervention reduce triglyceride levels by 50% in FCS patients, the life expectancy would be increased by 3.16 years and 7.72 fewer episodes of acute pancreatitis would occur, preventing 61.21 inpatient days and saving $118,594 in medical cost. **CONCLUSIONS:** FCS patients are at high risk of life-threatening and costly acute pancreatitis. Reduction in triglyceride levels has a significant impact of morbidity and mortality associated with acute pancreatitis. An effective triglyceride lowering intervention could mitigate the consequences of FCS significantly.

PND55

WORKING ABILITY AND MONETARILY VALUED PRODUCTIVITY OF PATIENTS WITH MULTIPLE SCLEROSIS TREATED WITH NATALIZUMAB

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OBJECTIVES: Relapsing remitting multiple sclerosis (RRMS) is a chronic inflammatory disease that represents the most common chronic neurological disorder in young adults. RRMS often leads to disability and is a major cause of reduced working capacity due to neurological diseases. Aim of this study is to investigate patients' working productivity during treatment with natalizumab. **METHODS:** RRMS-Patients treated with natalizumab for a maximum of three months prior to baseline were eligible for study participation. Patients completed the EQ-5D and a questionnaire focused on occupational status, working ability, and days absent from work at study start study, after 6 months and 12 months. Socio-demographic and clinical data were collected. Primary endpoint was work productivity, which is defined as hours worked. To estimate costs and cost offsets due to the therapy with natalizumab, an average monetary value per working hour has been calculated to value productivity monetarily. **RESULTS:** Preliminary results including 95 patients after 6 months of therapy show a significant increase in work productivity of 84 hours (p=0.014) for the whole study population compared to baseline. The average reduction of days absent from work was 4.8 days compared to baseline. The increase in working hours leads to an average change of monetarily valued productivity per patient and half-year from 6,550.40€ at baseline to 7,600.35€ after 6 months for the entire study population. A subgroup analysis has been run on the group of employed patients. The working hours increased significantly by 63h per half-year (p=0.025). **CONCLUSIONS:** In this study, the preliminary results show a significant increase in work productivity, which leads to a significant increase in the monetary value of productivity, for RRMS-patients treated with natalizumab. An increase in working hours as well as a decrease in days absent from work led to an increase in monetarily valued productivity. Study was funded by Biogen-Idec.

NEUROLOGICAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PND56

USING A PANEL SURVEY TO IDENTIFY PREDICTORS OF DISEASE-MODIFYING DRUG ADHERENCE IN PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES: Identify predictors of multiple sclerosis (MS) disease-modifying drug (DMD) adherence. **METHODS:** A random sample of adult MS patients from the US National Health and Wellness Survey or Lightspeed Research panel completed an internet survey in Nov/Dec2012. Clinical trial–naïve subjects with relapsing-remitting MS who were on their current DMD for ≥4months were included. Adherence was measured using the 4-item Morisky Scale. Patients were assigned to 'high' (negative response to all 4 questions: forget to take, careless at times about taking, stop if better, stop if worse) or 'intermediate/low' (any positive response). The survey contained demographic, disease characteristic and health care experience variables, which were evaluated as potential predictors of DMD adherence using logistic regression, controlling for age and gender. No adjustment was made for multiplicity. **RESULTS:** 969 patients completed the survey; 579 met analysis criteria. High vs. intermediate/low adherers represented 47.7% and 52.3%, respectively. Average age for high adherers was 49.1 (SD: 10.9), 81.5% female; intermediate/low adherers had an average age of 47.3 (SD: 11.4), 87.7% female. Of 149 variables, the following were associated with greater odds of high adherence: detailed discussions with health care professional about "how long the treatment had been available" (p=0.02; OR: 1.47; high 56.8% vs. intermediate/low 47.1%) or "long-term safety" (p=0.01; OR: 1.54; high 54.8% vs. intermediate/low 44.2%); satisfaction with DMD (p=0.04; OR: 1.14; high 5.4 [SD: 1.4] vs. intermediate/low 5.2 [SD: 1.3]); or insurance covered entire cost of DMD (p=0.01; OR: 1.71; high 23.1% vs. intermediate/low 15.2%). Results indicating lower odds of high adherence included longer duration on current therapy (p<0.01; OR: 0.99; high 63.2 [SD: 53.5] months vs. intermediate/low 75.9 [SD: 60.0] months) and cost made them "skip a dose" (p<0.01; OR: 0.37; high 5.3% vs. intermediate/low 13.4%) or "not fill or refill a prescription" (p<0.01; OR: 0.43; high 5.3% vs. intermediate/low 12.0%). **CONCLUSIONS:** Patient and provider dialogue, patient satisfaction with treatment and health plan benefit design aspects may affect DMD adherence.

PND57

MODELLING THE PERSISTENCE OF DISEASE-MODIFYING DRUG TREATMENT (DMT) AND ITS INDEPENDENT DRIVERS IN FINNISH MULTIPLE SCLEROSIS (MS) PATIENTS: PARAMETRIC SURVIVAL MODELLING

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OBJECTIVES: Explore how MS DMT-persistence can be modelled, compare model's performance and assess the independent drivers for DMT-persistence. **METHODS:** Analysis was based on 1638 DMT uses (1.1. 1991–31.12.2010, time at risk 4009 years) in incident MS-patient register from Tampere, Vaasa and Seinäjoki regions, Finland. DMT-persistence = DMT end-day - DMT initiation day. Cox, exponential, generalized gamma, Gompertz, log-logistic, log-normal, and Weibull regression survival models were used to model DMT-persistence. Models were compared based on goodness-of-fit statistics (Akaike and Bayesian information criteria). **RESULTS:** Mean follow-up from first MS-symptoms and age at first DMT-initiation were 13 and 36 years, respectively. 73% of patients were female. Based on the data exploration of all known covariates, three DMT-persistence approaches with different interpretations, selected covariates and data needs were modelled: 1] sex, birth year, time from symptoms to DMT, age, DMT line (1st, 2nd, 3rd, 4th, 5-7th), DMT (interferon-β-1a and -1b, glatiramer acetate, other) at DMT initiation; 2] approach 1] + Expanded Disability Status Scale (EDSS) at DMT initiation; and 3] approach 2] + DMT-discontinuation reason (pregnancy plan, flu-like symptoms, injection-site reactions, ineffectiveness, antibodies, other/unknown). There was no gold standard survival model for DMT-persistence, and some models accommodated higher number of covariates and associated dependencies better. For approaches 1] and 2] Weibull and for 3] Gompertz model provided the best goodness-of-fit. Based on all three models (one per approach 1] –3]) with best goodness-of-fit, higher EDSS or higher age at DMT initiation, treatment line (3rd and later), and incidence of intolerable adverse events (AE) or ineffectiveness were independently associated with shorter DMT persistence. In the approach 3], flu-like symptom and injection site AEs had the highest hazard ratio for shorter DMT-persistence. **CONCLUSIONS:** AEs, EDSS, age, treatment line and ineffectiveness were strong predictors for DMT-persistence. Flu-like symptoms and injection site AEs showed the highest hazard for DMT-discontinuation.

PND58

PERSISTENCE WITH FINGOLIMOD VERSUS DIMETHYL FUMARATE IN PATIENTS WITH MULTIPLE SCLEROSIS: RETROSPECTIVE ANALYSIS OF US OPEN-SOURCE PHARMACY DATA

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OBJECTIVES: To compare 6-month persistence rates among patients initiating the oral multiple sclerosis (MS) disease-modifying therapies (DMTs) fingolimod and dimethyl fumarate (DMF). **METHODS:** Our retrospective analysis used mail-order pharmacy claims from the US open-source LRx™ database (IMS). Patients with ≥1 fingolimod or DMF prescription (index DMT) between 01-April-2013 and 31-July-2013 were included. Patients were ≥18 years old, naive to fingolimod and DMF, and had not received multiple DMTs on the date of the first index DMT claim (index date). Prescription records were collected from pharmacies supplying ≥1 index DMT claim between the index date and the last month of follow-up. Persistence was assessed as time from initiating index DMT until discontinuation (gap of ≥60 days), receipt of another DMT or the end of the 6-month follow-up period. The risk of and time to index DMT discontinuation was assessed using a Cox proportional hazards model (controlling for age, gender and region) and Kaplan-Meier analysis, respectively. **RESULTS:** The study included 9546 patients (fingolimod: n=1390; DMF: n=8156). The proportion of patients discontinuing index DMT was significantly lower for patients receiving fingolimod (23.3%) versus DMF (36.6%; $p<0.0001$). The risk of discontinuation was 1.6-fold higher in the DMF cohort versus the fingolimod cohort (hazard ratio, 95% confidence intervals: 1.58, 1.41-1.77; $p<0.0001$). Time to discontinuation was significantly longer with fingolimod than with DMF ($p<0.0001$), resulting in a longer duration of therapy persistence for fingolimod versus DMF (mean ± standard deviation: 152±53 days versus 135±62 days, respectively). Results were similar when discontinuation was defined as a gap of ≥30 days ($p<0.0001$ for all outcomes). **CONCLUSIONS:** This analysis provides the first insight into short-term persistence rates with oral DMTs. In a real-world setting, the risk of discontinuation over 6 months was lower for patients initiating fingolimod versus DMF.