DEVELOPING SEVERITY INDEX FOR RHEUMATOID ARTHRITIS FROM HEALTH CARE CLAIMS DATA

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OBJECTIVES: Health care claims databases do not contain information about disease severity. The goal of this study was to develop a severity index for rheumatoid arthritis (SIFRA) for private health care claims data using a previously developed claims-based index from the Veteran's Administration (VA) Health System and rheumatoid arthritis medical records-based index of severity (RARBIS). METHODS: We extracted the following variables related to rheumatoid arthritis from the claims data: number of office visits or hospitalizations but was associated with greater numbers of index drug dis- or utilization changes compared with patients remaining on the branded product. Switching was not associated with increased incidence of ED visits or hospitalizations vs. 1.06). Compared with non-switchers, the phenytoin switch cohort had greater ERR for lamotrigine 0.97, 95% CI 0.80–1.17; ERR for divalproex 0.83, 95% CI

ERR for lamotrigine 0.97, 95% CI 0.80–1.17; ERR for divalproex 0.83, 95% CI 0.66–1.06). Compared with non-switchers, the phenytoin switch cohort had greater incidence of AED usage utilization changes (IRR 1.85, 95% CI 1.50–2.29). Lamotrigine and divalproex showed no differences in AED utilization between the switchers and non- switchers (IRR for lamotrigine 1.00, 95% CI 0.84–1.19; IRR for divalproex 1.02, 95% CI 0.88–1.42). CONCLUSIONS: Lamotrigine or divalproex brand to generic switching was not associated with increased incidence of ED visits or hospitalizations or utilization changes compared with patients remaining on the branded product. Brand to generic switching of phenytoin was associated with an increase in ED visits or hospitalizations but was associated with greater numbers of index drug discontinuations, dose changes or therapy augmentations. PND2

THE VALUE OF A PREDICTIVE DIAGNOSTIC BLOOD TEST IN MULTIPLE SCLEROSIS (MS)

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OBJECTIVES: To assess the cost effectiveness of gMSPro EDs, a test designed to identify MS patients with a high likelihood of progressing fast and in need of more aggressive treatment. METHODS: A literature-based discrete-event simulation follows patients visiting their physicians at defined EDS cost scores. At each visit, therapies are considered: less aggressive/less expensive therapies (assumed monthly cost of $2,000/patient) and a more aggressive/more expensive therapy (assumed monthly cost of $3,000/patient) associated with severe side effects. The more aggressive therapy is only considered cost effective in fast deteriorating patients. The expected cost effectiveness of each therapy was calculated using a Markov model (using EDDS scores as health states) and applying a Bayesian updating process considers the likelihood that the patient is “fast deteriorating” and/or responds to therapy. The model compares patients with moderate RLS severity moving to mild severity with the MS patients who progress fast results in more frequent (25.18% vs. 22.41%) and earlier (22.4 years on average) use of aggressive therapy. The test is estimated to result in a gain of 0.11 YALYS and to be economically dominant up to a price of $2640 (cost of medication estimated to increase by $2194 which is offset by savings of $722 of other direct medical costs and $2920 of production losses). CONCLUSIONS: The gMSPro EDs is likely to be a cost effective addition in the identification of the optimal therapy for MS patients.

GASTROINTESTINAL DISORDERS IN PATIENTS WITH PARKINSON’S DISEASE: A DOUBLE-EDGED SWORD

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OBJECTIVES: A majority of patients with Parkinson’s disease (PD) eventually develop gastrointestinal disorders (GID), which can impair the onset of symptom relief by PD drugs. There was a need to better understand the rate and consequences of GID among patients diagnosed with PD. METHODS: A two years matched retrospective cohort study was performed in a registered Pharmacist® data set, a US claims data base containing records on demographics, diagnoses, procedures, provider, prescrip- tions and claims that span from 2000 to 2008. Patients with previous diagnoses of Parkinson’s Disease, with continuous prescriptions of levodopa or dopa- mine agonists between September 1, 2005 and September 1, 2006 were selected. Patients with and without GID were matched by age, gender, comorbidities, and treatment regime. Their respective emerging health outcomes were followed-up for two years. Outcomes were defined on the basis of a literature review and included neuropsychiatric, motor, urogenital disturbances, health care utilization and related costs. RESULTS: In the data cut, GID incidence among patients with PD increased over time to stabilize at 75% at 92 months. Four hundred patients with PD and GID was matched to 485 controls with PD but without GID. GID was associated with significantly higher rates of neuropsychiatric and motor disorders, including psychosexual dysfunction (RR = 8, p = 0.05), anxiety (RR = 1.61, p < 0.01), depression (RR = 1.28, p = 0.03), ataxia (RR = 1.24, p = 0.03), pain (RR = 1.28, p < 0.01), movement disorder (RR = 1.39, p < 0.01), urinary incontinence (RR = 1.43, p = 0.02), and risk of fall (RR = 1.44, p = 0.04). ER admissions (ratio = 1.42, p = 0.01), number of concurren- dent drugs (ratio = 1.06, p = 0.04) and PD and non-PD health care costs (ratios = 1.13 and 1.12, p < 0.01 respectively) increased during the observation period in the GID patients. CONCLUSIONS: GID have a substantial deleterious effect on major PD- related clinical and societal outcomes. Non oral formulations of PD drugs (apomor- phine or L-dopa pumps or rotigotine) may offer a good opportunity to bypass gastrointestinal tract, and accordingly maximize patient response to treatment.

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3-month, estimated, direct cost savings for treatment with GEn ranged from $154 greater increase for pregabalin patients, p = 0.001). AD patients had a higher pre-to-post index prevalence of non-AD dementia, anxiety, and psychosis than control patients (p < 0.001). AD spouses had increased antidepressant use post index (p < 0.001); control spouses showed no change. AD patients had a greater increase in total costs post index date than control patients (p < 0.001); no difference in total cost was observed between AD and control spouses, whose increases were similar to control patients. CONCLUSIONS: Matching on a risk adjuster score resulted in similar rates of chronic conditions between case and control couples but may have limited the ability to detect whether AD impacts spouse health care resource use. However, significant differences in prevalence of dementia and other mental health conditions were noted for AD patients, and an increase in antidepressant use suggests such a trend.

### PND6

**MODELING THE ESTIMATED COST-SAVINGS OF STRATIFIED CARE FOR MIGRAINE HEADACHES FROM A U.S. PERSPECTIVE**

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**OBJECTIVES:** To estimate the differences in costs of treating migraine headaches employing a stratified care (STRAT) approach versus the more common stepped care (STEP) using MIDAS scores in the U.S. STRAT using MIDAS scores has been shown to be cost-effective in other settings. However, STRAT is not widely used in the U.S. In this study, a published decision model was adapted to the U.S. setting using the differences in costs were evaluated for STEP and STRAT in the U.S. by differentiating steps I, II, and III were taken from the published decision tree. In the base-case the proportion of MIDAS I, II, and III patients were 5%, 25%, and 70% respectively. STEP patients were forced through each phase of therapy regardless of MIDAS score. STRAT patients were moved ahead to advanced phases of therapy given higher MIDAS scores. In the model, a sample of 1000 patients is taken and is distributed according to MIDAS scores. The costs are attached to each node of the treatment algorithm to obtain the total costs. RESULTS: Base case results showed that mean annual direct medical costs for treatment of migraine headaches with STEP was $154 greater increase for pregabalin patients, p = 0.035) and indirect costs ($458 relative decrease for pregabalin patients, p = 0.324) were not statistically significant. CONCLUSIONS: There were no significant pre-to-post differences between pregabalin and duloxetine treatment groups in opoid use, DPN-related pain medication use, pDPN-attributable, all-cause and indirect expenditures.

### PND7

**THE IMPACT OF SPECIALTY PHARMACY PARTICIPATION ON HEALTH CARE COSTS IN A MULTIPLE SCLEROSIS POPULATION USING BIOLOGIC DMD THERAPY**

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**OBJECTIVES:** To determine if the pharmacy provider model for patients with relapsing remitting multiple sclerosis (MS) on biologic disease modifying drugs (DMD) impacts medical costs. METHODS: A retrospective cohort study design was used. Pharmacy and medical claims data for MS patients (N = 5,322) were extracted for 2008 from a pharmacy benefit management (PBM) company. The two study populations included: 1) patients who received therapy from a specialty pharmacy, and 2) those who received therapy from retail pharmacies. Adherence was measured using Medication Possession Ratio (MPR), with patients considered adherent for MPR ≥ 80%. Nonparametric statistical tests and multivariate log-linear regression analyses were used to determine differences between the two populations. RESULTS: The results suggest that MS patients receiving therapy from a specialty pharmacy have significantly lower total medical costs than patients who receive therapy from a retail pharmacy (p = 0.18; 95% CI = -3.3, -0.02). Overall, specialty pharmacy MS patients tended to have lower total medical costs, IP costs and office visits as compared to retail pharmacy patients. CONCLUSIONS: Speciality pharmacies can be cost-effective in treating relapsing remitting MS patients. Specialty pharmacies often have additional patient care services that help the patient manage their therapy more effectively. This study demonstrates that MS patients taking a DMD who are medically managed in a specialty pharmacy setting can achieve lower medical costs. This has significant implications for insurers and patients.