PND6

CONNECTEDCARE FOR MS: IMPACT OF MANAGED THERAPY ON ADHERENCE TO MULTIPLE SCLEROSIS MEDICATIONS

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BACKGROUND: A large national retail pharmacy chain developed a patient-centric program providing enhanced levels of monitoring and care for patients taking MS Specialty Drugs as dispensed in a retail setting. MS biologics covered in the ConnectedCare for Multiple Sclerosis (CCMS) program during this analysis period included Avonex, Betaseron, Copaxone, Extavia, and Rebif. **OBJECTIVES:** To compare adherence rates for MS biologics between managed and non-managed patients new to retail pharmacy or the CCMS program. The effect of health complications on adherence rates was also assessed. **METHODS:** This was a retrospective analysis of MS patients new to therapy (or pharmacy chain) during the initial six months of CCMS. Patients were followed for one year. Adherence was measured using proportion of days covered (PDC). For the primary objective, propensity scores based on patients' gender, age, presence of chronic comorbidities, and pre-study adherence to chronic medications were used to match the CCMS intervention group to a comparisons group. Sub-group analysis on health complications (chronic medication comorbidity, or assessment screenings for depression and fatigue) used Analysis of Covariance to adjust for the propensity variables when examining PDC in the presence of health complications across managed cohorts. **RESULTS:** Mean PDC was nearly 10% higher for the managed CCMS patients than for non-managed patients. Patients not managed with at least one chronic comorbidity had about an 11% lower PDC than non-managed patients without a comorbid condition, whereas, managed patients indicated little difference in relation to the presence of a comorbidity. Adherence levels were also reduced for non-managed patients reporting fatigue and depression, yet self-reports of fatigue and depression did not significantly affect adherence levels among managed patients. **CONCLUSIONS:** The provision of medication therapy management for MS patients significantly increases adherence to MS biologic medications. Among non-managed patients, adherence is even further reduced among patients with fatigue and depression.

PND7

CLINICAL AND ECONOMIC BURDEN OF VETERAN ALZHEIMER'S DISEASE PATIENTS IN THE UNITED STATES: A REAL-WORLD EVALUATION

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OBJECTIVES: To assess the clinical and economic burden of Alzheimer's disease in the U.S. veteran population. **METHODS:** Data from the Veterans Health Administration (VHA) Medical SAS Datasets was used to conduct a retrospective study (October 1, 2005 - May 31, 2012). Patients diagnosed with Alzheimer's disease throughout the study period were identified using International Classification of Disease 9th Revision Clinical Modification (ICD-9-CM) diagnosis code 331.0. Health care resource utilization and costs were assessed in the 12-month follow-up period, and clinical status was examined for the 12-month baseline period before disease identification. Major treatments during the 60 days after disease identification were also studied. All descriptive statistical analyses were performed using SAS v9.3 software. **RESULTS:** A total of 54,161 Alzheimer's disease patients were identified in the VHA population during the study period. The most common comorbidities for Alzheimer's disease patients were hypertension (n=14,387, 26.56%), followed by mental disorders (n=13,440, 24.81%), diabetes (n=7,440, 13.74%) and memory loss (n=4,850, 8.95%). Other comorbidities included senile dementia and hearing loss. The top three treatments for Alzheimer's disease were donepezil hydrochloride (n=16,526, 30.51%), simvastatin (n=16,010, 29.56%), and memantine (n=11,081, 20.46%). Outpatient services were utilized by 98.62% of Alzheimer's patients, followed by pharmacy (86.75%) and inpatient visits (30.29%). Outpatient ($7,650, [standard deviation] SD=$12,539), pharmacy ($1,660, SD=$2,688), and inpatient costs ($16,790, SD=$75,963) contributed to follow-up health care expenditures. **CONCLUSIONS:** The U.S. veteran Alzheimer's disease patient population had high percentages of comorbid conditions, including hypertension and mental disorders, as well as outpatient and inpatient visits. Further analysis is needed to evaluate the extent to which the treatment of Alzheimer's disease is complicated by the presence of these comorbidities.

PND8

COMORBIDITIES AND ECONOMIC BURDEN OF MULTIPLE SCLEROSIS PATIENTS IN THE UNITED STATES VETERAN POPULATION

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OBJECTIVES: To examine the comorbidities and economic burden of patients diagnosed with multiple sclerosis (MS) in the U.S. veteran population. **METHODS:** The study sample was extracted from the Veterans Health Administration (VHA) Medical SAS datasets from October 1, 2005 through May 31, 2012. All patients diagnosed with MS throughout the study period were identified using International Classification of Diseases 9th Revision Clinical Modification (ICD-9-CM) diagnosis code 340.xx. Comorbid conditions were assessed for the 1-year baseline period before the MS identification date, and health care utilization and costs were assessed for 1 year of follow-up after the identification date. Statistical analyses were performed using SAS v9.3 software. **RESULTS:** There were 9,798 MS patients from 2005 to 2012 in the U.S. veteran population. The most frequent comorbidity for MS patients was hypertension (15.04%). All other comorbidities, including among others diabetes, depressive disorder, and lumbago, had frequencies of less than 10%. Common treatment medications for MS were simvastatin, omeprazole, lisinopril, and gabapentin. A total of 9,724 (99.24%) MS patients had outpatient visits, while 8,471 (86.46%) patients had pharmacy visits and 1,976 (20.17%) inpatient visits. Outpatient, pharmacy and inpatient costs were $11,349 (standard deviation [SD]=$19,068), $3,220 (SD=$7,285), and $9,171 (SD=$57,129), respectively. **CONCLUSIONS:** MS treatment is complicated by the presence of comorbidities. Further analysis in the context of complicated comorbid condition diagnoses is required to improve the overall burden of illness of MS patients.

PND9

VALIDATION OF A CHINESE VERSION OF NEUROPSYCHIATRY UNIT COGNITIVE ASSESSMENT TOOL (NUCOG)

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OBJECTIVES: To validate a Chinese version of NUCOG **METHODS:** Accepted translation procedures were followed to develop a Chinese version of NUCOG. Patients from two hospitals were recruited between July and October, 2012. Statistical analysis was performed using SPSS 20.0. Subgroup analysis according to diagnosis was performed. Receiver Operating Characteristic (ROC) curves were utilized to test criterion validity. Convergent validity was assessed via correlations between NUCOG and MMSE and internal consistency was measured to test the reliability. **RESULTS:** 529 subjects comprised of patients with epilepsy (n=144), neurological diseases (n=81), dementia (n=44), control group (n=260) completed NUCOG and MMSE. Overall, both NUCOG and MMSE scores differed significantly across four groups with dementia<epilepsy=neurology<controls ($p<0.0001$). The subscale-by-group analysis of NUCOG indicated different cognitive patterns for four groups, with patient groups scoring lowest in memory and executive domains. All the four groups achieved higher scores in the language domain than in other domains. The NUCOG, but not the MMSE, discriminated between patients with simple partial and secondary generalized/tonic-clonic generalized seizures, stroke and Transient Ischemic Attack (TIA). Compared to the MMSE, the NUCOG exhibited higher area under the ROC curve (0.969 vs. 0.915) to detect dementia among patients. A premium cutoff score of 70.5 gave a sensitivity of 0.955 and specificity of 0.875 to detect dementia in the patient groups for NUCOG. The convergent validity was substantially correlated across entire sample, with Spearman's r of 0.787 ($p<0.0001$). Internal consistency of NUCOG by Cronbach's α was 0.922. **CONCLUSIONS:** The Chinese version of NUCOG was demonstrated to be a sensitive, reliable screening tool for cognitive impairment. NUCOG could also better differentiate patients with certain seizure types, stroke and TIA compared to the MMSE. This would potentially expand the clinical usefulness of NUCOG in enabling clinicians to measure the cognitive profile of patients with epilepsy and ischemic cerebrovascular diseases.

PND10

PREDICTING THE LONG-TERM CLINICAL EFFECTIVENESS OF DACLIZUMAB IN RELAPSING-REMITTING MULTIPLE SCLEROSIS: A NEW MODELING FRAMEWORK USING DISCRETE EVENT SIMULATION

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OBJECTIVES: SELECT, a one-year phase II randomized controlled trial (RCT), showed benefits for daclizumab high-yield process 150mg (DAC HYP) versus placebo on relapses and disability among patients with relapsing-remitting multiple sclerosis (RRMS). This analysis utilized discrete-event simulation (DES) to model the potential long-term clinical implications of this trial. **METHODS:** An RRMS DES model that predicts the course of relapses, disability progression/regression, conversion to secondary-progressive MS (SPMS), and death was developed. During the RR phase, the occurrence of relapses could lead to change in patient's Expanded Disability Status Scale (EDSS) scores, which in turn influences the risk of relapses. Both endpoints are predicted based on treatment and other predictors using two interrelated equations derived from four RCTs of RRMS patients (n=4,189), including SELECT, AFFIRM, CONFIRM, and DEFINE. Treatment can be stopped for various reasons and was assumed to have no residual effect at discontinuation. Conversion to SPMS or death could occur at any time and are predicted based on patient's EDSS scores and other relevant characteristics using published epidemiological data. **RESULTS:** Over 20 years, patients on DAC HYP were predicted to result in: i) fewer relapses per patient (5.1 vs. 7.2); ii) a higher proportion of patients free of any relapse (24% vs. 16%); iii) a lower percent of patients progressing to SPMS (69% vs. 74%), and iv) more time spent in less severe disability states (15.1 vs. 14.3 years in EDSS<7) compared to those without treatment. Life expectancy was also longer for patients on DAC HYP, but the difference was small. These outcomes were most sensitive to model time horizon. **CONCLUSIONS:** Long-term modeling based on the SELECT trial outcomes suggests that DAC HYP has a positive impact on key outcome measures of interest to patients with RRMS and their clinicians. Evidence from its phase III trial is still needed to support its use.

PND11

AN INTEGRATED ANALYSIS OF RELAPSES REQUIRING INTRAVENOUS STEROID USE AND MULTIPLE SCLEROSIS (MS)-RELATED HOSPITALIZATIONS FROM THE BG-12 (DIMETHYL FUMARATE) PHASE 3 DEFINE AND CONFIRM STUDIES

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