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PND15

ECONOMICAL EVALUATION OF DIFFERENT FORMS OF BETAHISTINE IN PATIENTS WITH VERTIGO

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OBJECTIVES: to perform economic evaluation of three forms of betahistine in patients with vertigo. **METHODS:** an open-labeled prospective multicenter randomized study was performed in 14 out-patient clinics of Russia. The duration of a study was 30 days. Patients with vertigo were treated with three forms of betahistine (Betaserc, Betaver, Vestibo) in combination with any other medications to the discretion of investigator. The effectiveness criteria were proportion of patients with absence of moderate and severe functional disorders (according to International Classification of Functioning, Disability and Health) and increase of patients' quality of life rate compared to the initial one (according to EQ-5D questionnaire). Cost-effectiveness and cost-utility ratios were calculated. **RESULTS:** Betaver group included 70 (33.2%) patients, Betaserc group—71 (33.6%) patients, and Vestibo group—70 (33.2%) patients with moderate vertigo. All patients initially had moderate and severe functional disorders. The proportion of patients without absence of moderate and severe functional disorders up to the end of a study was 54% in Betaver group, 57% in Vestibo group and 69% in Betaserc group. The average difference between initial quality of life rate and the quality of life after the treatment was 19.53, 19.62 and 22.79 (Betaver, Vestibo and Betaserc groups accordingly). Cost of treatment was nearly similar in all groups. The cost-effectiveness ratio according to the criteria "the proportion of patients with absence of moderate and severe functional disorders" was minimal in Betaserc group (8,088.57) compared to Betaver (10,358.17) and Vestibo (8,955.49) groups. The cost-utility ratio according to the criteria "the increase of patients' quality of life rate compared to the initial one" was also minimal in Betaserc group (244.89) compared to Betaver (286.4) and Vestibo (260.17) groups. **CONCLUSIONS:** Betaserc seems to be more clinically and economically effective betahistine compared to another two medications in treatment of patients with vertigo.

PND16

COST SAVING OPPORTUNITY OF POTENTIAL PHARMACIST-INITIATED IV-TO-PO LEVETIRACETAM SWITCHES: A PREDICTION MODEL BASED ON REAL-WORLD DATA

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OBJECTIVES: Opportunity exists for certain hospitalized patients to appropriately receive oral (PO) levetiracetam given its bioavailability of 100%. Use of intravenous (IV) levetiracetam at our institution had increased and was associated with significant annual cost. This study aimed to evaluate the use of IV levetiracetam, to identify a cost saving opportunity and to project cost savings of potential pharmacist-initiated IV-to-PO levetiracetam switches. The goal was to provide information regarding medication utilization and cost saving opportunities for hospital administration to make informed formulary decisions. **METHODS:** A retrospective medical chart review on 100 randomly selected adult patients receiving at least two doses of IV levetiracetam during hospital stays between July 1, 2008 and November 30, 2008 was conducted. Pre-defined eligibility of IV-to-PO levetiracetam switches, costs, doses and frequencies were obtained for each patient-day. Only levetiracetam costs were considered and presented as 2008 average wholesale prices without further adjustments. Monte Carlo simulation models were created to predict cost savings, and model inputs, parameters and plausible ranges were determined based on real-world data. Three scenarios were hypothesized where switches could have been made with "no delay," "12-hour delay" or "24-hour delay" of pharmacist interventions upon identification of eligibility. Probabilistic sensitivity analysis was performed (2,500 trials) for each scenario. **RESULTS:** Among 729 patient-days (from 99 subjects with one subject excluded as an outlier), 6.6% made IV-to-PO levetiracetam switches and additional 66% were eligible for such switch. With a conservative scenario of 24-hour delay, potential cost savings were estimated as follows: mean $512 (SD $714) per patient or $69.6 (SD $0.4) per patient-day; median $302 (95% CI $20-$1,661) per patient. Of 2,500 estimates, 19.6% could have potential savings of $100–200 per patient, followed by $0-$100 (15.5%), $200-$300 (14.6%) and $300-$400 (9.6%). **CONCLUSIONS:** Pharmacists have potential cost saving opportunities by identification of eligible IV-to-PO levetiracetam switches.

PND17

ECONOMIC EVALUATION OF THE IMPACT OF MEMANTINE ON TIME TO NURSING HOME ADMISSION IN THE TREATMENT OF ALZHEIMER'S DISEASE

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OBJECTIVES: An observational study recently showed that combining memantine with a cholinesterase inhibitor (ChEI) treatment significantly delayed admission to a nursing home in patients with Alzheimer's disease. The objective of this analysis was to evaluate the economic impact of the concomitant use of memantine and ChEI on time to institutionalization in a Canadian population. **METHODS:** A cost-utility analysis using a Markov model over a 7 years time horizon was performed according to a public third party perspective and a societal perspective. The Markov model includes the following states: non-institutionalized, institutionalized, and deceased. Transition probabilities for institutionalisation were taken from the study by Lopez et al., while transition probabilities for death were taken from Canadian survival tables and adjusted for mortality rates specific to Alzheimer's disease. For the publicly funded health care system perspective, costs of medication (ChEI and ChEI + memantine) as well as the costs of care provided in the community and in nursing homes were considered. For the societal perspective, costs of direct care and supervision provided by caregivers were added. **RESULTS:** From both a societal and a publicly funded health care system perspective, the concomitant use of a ChEI and memantine is a dominant strategy over the use of a ChEI alone. Thus, the costs associated with the use of memantine in combination with a ChEI are lower than those associated with the use of a ChEI alone, and the number of Quality-adjusted-life-years (QALYs) obtained with a ChEI plus memantine is higher than the number of QALYs obtained with a ChEI alone. **CONCLUSIONS:** The results of this economic evaluation indicate that the use of memantine combined with a ChEI to treat Alzheimer's disease is a cost-effective alternative compared to the use of a ChEI alone, both from a health care and societal perspective.

PND18

HEALTH STATUS, RESOURCE UTILIZATION, AND WORK PRODUCTIVITY FOR CAREGIVERS OF ADULTS WITH EPILEPSY: A PROPENSITY SCORE ANALYSIS OF NATIONAL SURVEY DATA

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OBJECTIVES: Compare health status, resource utilization, and work productivity between caregivers for an adult with epilepsy and a control group of non-caregivers. **METHODS:** Respondents to the 2009 U.S. National Health and Wellness Survey (NHWS), a self-administered, internet-based questionnaire of adults, who reported providing care for an adult relative with epilepsy, were included in the caregiver group. Propensity score methods were used to construct a 5:1 matched control group from the general NHWS population, excluding caregivers for any other condition, matched on demographics and health characteristics. The caregiver and control groups were compared on health status (SF-12v2 Physical Component Summary (PCS) and Mental Component Summary (MCS) score) and resource use (number of self-reported hospitalizations, ER visits, and physician visits in the past 6 months). Employed caregivers were similarly matched to employed controls from the general NHWS respondents and compared on work productivity using the Work Productivity and Activity Impairment (WPAI) questionnaire. Statistical analyses included chi-square tests, t-tests, and generalized linear models. **RESULTS:** Of the 75,000 NHWS respondents, 222 self-reported caregivers were matched to 1,110 controls ($p > 0.25$ for all included covariates). The caregiver group was 51.8% female with mean (standard deviation) age of 45.2 (15.4) years. Caregivers had lower mean SF-12v2 PCS scores than controls (43.0 vs. 46.3, respectively; $p < 0.0001$) and showed no difference on mean MCS scores (44.8 vs. 46.3, respectively; $p = 0.090$). Caregivers reported significantly ($p < 0.0001$) more ER visits (rate ratio (RR) = the ratio of the caregiver group mean to the control group mean = 4.15), hospitalizations (RR = 6.44), and provider visits (RR = 1.59) than controls. Employed caregivers (n = 124) reported significantly ($p \leq 0.0018$) higher rates of absenteeism (RR = 2.66), presenteeism (RR = 2.08), overall work impairment (RR = 2.02), and activity impairment (RR = 1.76) versus controls. **CONCLUSIONS:** Caregivers of adults with epilepsy reported utilizing more health care resources, and had lower work productivity, worse physical health status yet no difference in mental health status versus non-caregivers.

NEUROLOGICAL DISORDERS – Patient-Reported Outcomes Studies

PND19

IMPACT OF MEDICATION ADHERENCE TO DISEASE-MODIFYING DRUGS ON SEVERE RELAPSE, AND DIRECT AND INDIRECT COSTS AMONG EMPLOYEES WITH MULTIPLE SCLEROSIS

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OBJECTIVES: Compare multiple sclerosis (MS) severe relapse rates and total direct and indirect costs over a two-year study period between employees with MS adherent and nonadherent to disease-modifying drugs (DMDs) **METHODS:** Employees with ≥1 MS diagnosis (ICD-9-CM: 340.x) and ≥1 DMD pharmacy claim January 1, 2002–December 31, 2006 were selected from a large US administrative claims database. Patients had continuous coverage ≥6 months before (baseline) and ≥24 months after (study period) their index date (first DMD claim). Adherence was measured using the medication possession ratio (MPR) over the 24-month study period. Patients with MPR ≥80% were classified as adherent (n = 448) and those with MPR < 80% were classified as nonadherent (n = 200). Multivariate analyses adjusting for differences in baseline characteristics were used to compare severe relapse rates (inpatient or emergency department visit with MS diagnosis) and costs in 2007 dollars between DMD adherent and nonadherent patients. Direct medical costs were calculated as reimbursements to providers for medical services and prescription drugs excluding DMDs. Indirect costs included disability and medically-related absenteeism costs. **RESULTS:** DMD adherent patients were on average older (43.5 vs. 41.8 years, $P = 0.015$) and more likely to be male (38.6% vs. 26.0%, $P = 0.002$) compared with nonadherent