PND12

COST-EFFECTIVENESS OF RASAGILINE VERSUS ROPINIROLE EXTENDED RELEASE IN DELAYING LEVODOPA IN THE TREATMENT OF EARLY PARKINSON'S DISEASE IN THE UNITED STATES

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OBJECTIVES: Parkinson's disease (PD) affects approximately 1 million people in the United States. A common PD treatment is levodopa; however, motor fluctuations and dyskinesias are common side effects. This model examines whether rasagiline, a once-daily irreversible monoamine oxidase type-B inhibitor for treatment of early PD, offers a cost-effective treatment strategy and delays the initiation of levodopa when compared with ropinirole extended release (ropinirole), a once-daily dopamine agonist. **METHODS:** A five-year Markov model was utilized to examine the cost-effectiveness of initiating early treatment of PD with rasagiline versus ropinirole from a managed care perspective. Strategies included initial therapy with rasagiline, followed by either ropinirole or levodopa, versus initiating therapy with ropinirole, followed by levodopa. Patients could transition therapy every six months; patients on levodopa could develop dyskinesias. Rasagiline transition probabilities obtained from the TVP-1012 in Early Monotherapy for Parkinson's Disease Outpatients (TEMPO) trial. Medical costs and utility weights were from published literature. Drug costs were from Red Book. Model outcomes included time to levodopa treatment, time to levodopa-induced dyskinesias, life-years, quality-adjusted life-years (QALY), and incremental cost per QALY. One-way and probabilistic sensitivity analyses were performed. **RESULTS:** Compared to initiating treatment with ropinirole, treatment initiation with rasagiline was associated with a delay in the time to treatment with levodopa (4.45 months) and subsequently the time to levodopa-induced dyskinesia (1.00 months). Rasagiline initiation was also associated with lower costs (–$1660) and higher expected QALYs (+0.0608) over 5 years, which is dominant. The model was most sensitive to clinical efficacy and drug costs. **CONCLUSIONS:** Initiating treatment with rasagiline was found to delay treatment with levodopa and subsequent dyskinesias, compared to initiating treatment with ropinirole, and appears to be a cost-saving and clinically-effective treatment strategy.

PND13

A COST-CONSEQUENCES ANALYSIS OF THE IMPACT OF A-RATED ANTI-EPILEPTIC DRUG SWITCHING: THE MANAGED CARE PLAN PERSPECTIVE

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OBJECTIVES: Switching between FDA-approved bioequivalent anti-epileptic drugs (AEDs) is associated with a higher risk of epilepsy-related events possibly owing to a narrow therapeutic range or index (NTI). One motivation for these switches may be to reduce the prescription costs required to manage epilepsy. Our objective was to characterize the annual cost impact of these switches from the payor perspective. **METHODS:** We used data from the 2006 MarketScan® claims database. We computed total annual costs for those with an AED switch compared to those with no switch as the sum of total prescription claims for epilepsy treatment medications, inpatient services, and outpatient services. We utilized multiple linear regression to adjust the costs for age, gender, and diagnosis category. Incremental cost differences were calculated by the addition of an A-rated AED switch indicator. **RESULTS:** A cohort of 10,464 eligible epileptics was identified, with 739 experiencing at least one switch. Those with a switch were older (42.5 vs. 39.5 years), had a different regional distribution compared to those without a switch, but had similar gender and seizure diagnosis characteristics. Individual costs and consequences were estimated for prescriptions: $505 (95% CI: –$170, $1181), inpatient services: $316 (95% CI: –$213, $846), and outpatient services: $214 (95% CI: $1.77, $427). Those with an A-rated switch had $1,036 in additional annual health care costs (95% CI: $96, $1977). This analysis contains limitations including a lack of adjustment for disease severity and no comparison of individual patients' pre and post switch costs. **CONCLUSIONS:** Those who switched between A-rated AEDs incurred more health care costs. A policy of compulsory generic switching to reduce drug costs in this population could result in additional expenditures of $10.8 million per year.

PND14

COST OF PSEUDOMONAS AERUGINOSA IN CYSTIC FIBROSIS PATIENTS IN THE UNITED KINGDOM

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OBJECTIVES: Existing assessments of the cost of Pseudomonas Aeruginosa (PA) infections among patients with cystic fibrosis (CF) in the United Kingdom (UK) are incomplete and outdated. Therefore, we sought to determine the cost of PA infections in CF patients in the UK from a societal perspective. **METHODS:** We developed a prevalence-based model with data on age- and sex-specific PA prevalence, health care utilization, other (non-medical) components of care, and productivity for CF patients. Using data from the medical literature, practice guidelines, National Schedule of Reference unit costs, and expert panel input, the annual per capita and total UK costs were calculated. Direct medical and non-medical costs were calculated as the product of 1) the age-dependent probability that a care component is used, 2) the age-dependent number of units used, and 3) its unit price. Indirect costs were calculated based on time lost from paid labor (work productivity) and unpaid labor, i.e. providing/receiving care or household work (leisure time). **RESULTS:** Mean total annual per capita cost in the UK for 2007 was ≤22,186 [≤12,945 (direct medical), ≤505 (direct non-medical), and ≤8,735 (indirect)]. Approximately 2,400 people in the UK have CF with PA; therefore, the total national cost is ≤52.8 million (M) [(≤30.8M direct medical, ≤1.2M direct non-medical, and ≤20.8M indirect)]. Twenty percent of the direct medical costs (DMC) result from acute exacerbations with 58% resulting from chronic care of PA infections. **CONCLUSIONS:** The economic burden of PA in CF patients is substantial. Inasmuch as 58% of this cost is for direct medical care and 39% for indirect costs (13% and 87% for work and leisure time lost respectively), the medical community, employers and patients should be attentive to policy or product innovations that can diminish the incidence and burden of PA in CF, specifically focusing on delaying chronic infection and preventing acute exacerbations.

PND15

LITERATURE REVIEW ON THE GLOBAL COST OF MULTIPLE SCLEROSIS

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OBJECTIVES: Multiple Sclerosis (MS), a demyelinating disease of the central nervous system, typically strikes adults during the primary productive time of their life. The physical and cognitive symptoms of MS can restrict individual's physical and economic activity resulting in a major financial burden on the patient, family, health system and society. This literature review was conducted to document the global economic burden of patients with MS. **METHODS:** A review of the medical literature was conducted between January 1993 and August 2008 using the Medline, Embase, PsycInfo, HEED, and NHS-HEED databases. We included all studies written in the English language that reported any direct medical, direct non-medical, indirect, or intangible costs. **RESULTS:** We identified 40 cost-of-illness studies which met the a priori inclusion criteria and represented the United States, Canada, Europe, Australia, and New Zealand. Costs associated with MS varied dramatically between countries. Comparing studies that reported consistent cost categories indicated that disease-modifying drugs constituted the most important direct cost category in Australia, Belgium, France, Germany, Italy, Spain, Switzerland, UK and the US. In the UK, informal care was also an important direct cost category and in Sweden frequent use of personal assistants was a driver of direct costs. Studies that adopted societal perspectives estimated larger indirect than direct costs. Productivity losses due to early retirement and time lost because of MS dominated the indirect costs. In general, the total cost of MS increased with disease severity. Both direct and indirect costs were higher overall for patients with SPMS vs. RRMS; however, these costs appeared to be related to level of disease severity rather than by type of MS. **CONCLUSIONS:** Despite differences in country-specific factors, all studies included in this review showed that MS constitutes a major financial burden on the patient, caregiver, health system, and society.

PND16

ECONOMIC IMPACT OF DISEASE-MODIFYING THERAPIES IN MULTIPLE SCLEROSIS PATIENTS IN A MANAGED CARE SETTING

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OBJECTIVES: To estimate total and disease-attributable costs and resource utilization associated with the use of disease-modifying therapies (DMTs) by multiple sclerosis (MS) patients from administrative claims data. **METHODS:** Data from the HealthCore Integrated Research Database were used to identify patients with ≥1 medical claims for MS (ICD-9-CM code 340.xx). The date of first MS claim during January 1, 2004-March 31, 2007 was defined as the index date and patients were classified into 4 DMT treatment groups based on first DMT used during the post index period (i.e., intramuscular interferon beta-1a (IMIFβ-1a), subcutaneous interferon beta-1a (SCIFβ-1a), glatiramer acetate (GA), interferon beta-1b (IFβ-1b)). All-cause and MS-attributable costs and resource utilization associated with inpatient hospitalizations, emergency room visits, physician office visits, other outpatient services and prescription drug claims were determined by DMT group. Baseline patient demographic characteristics and comorbidities were also determined. Annualized total and MS-attributable costs were analyzed using multivariate analysis to control for baseline differences between groups. **RESULTS:** A total of 2703 MS patients (IMIFβ-1a = 950; SCIFβ-1a = 481; IFβ-1b = 378; GA = 894) received DMTs during follow-up. Patient mean age was 43 ± 10 years and 75% were female. The proportion of patients with ≥1MS-attributable hospitalization differed between groups ($p < 0.01$), ranging from 29.7% (IMIFβ-1a) to 38.5% (SCIFβ-1a). Unadjusted total annualized costs were lowest for IMIFβ-1a, $21,457, and highest for SCIFβ-1a, $26,201 ($p < 0.01$), whereas unadjusted annualized MS-attributable costs were lowest for IMIFβ-1a, $17,370, and highest for SCIFβ-1a, $21,617 ($p < 0.01$). After adjusting for baseline differences, total annualized costs were significantly higher for GA ($22,394, $p = 0.019$), and SCIFβ-1a ($24,526, $p < 0.0001$) compared to IMIFβ-1a ($21,130) while MS-attributable costs were significantly higher for SCIFβ-1a ($20,942, $p < 0.0001$) compared to IMIFβ-1a ($17,295). **CONCLUSIONS:** Total and MS-attributable costs were lowest for IMIFβ-1a and highest for SCIFβ-1a. Economic impact, in addition to outcomes from clinical studies, may be useful in understanding the overall benefits of different DMTs.