NEUROLOGICAL/GENETIC DISORDERS (Migraine, Alzheimer's, Parkinson's, MS, Epilepsy, Brain Injury, Hunter Syndrome, Insomnia)

NEUROLOGICAL/GENETIC DISORDERS (Migraine, Alzheimer's, Parkinson's, MS, Epilepsy, Brain Injury, Hunter Syndrome, Insomnia)—Clinical Outcomes Studies

PNL1

HOW COGNITIVE FUNCTION AFFECTS ACTIVITIES OF DAILY LIVING IN PATIENTS WITH ALZHEIMER'S DISEASE

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OBJECTIVES: To attach meaningfulness to clinically relevant differences on cognitive functioning using activities of daily living. METHODS: Baseline data from a 12-week clinical trial of patients with mild-to-moderate Alzheimer's disease (n = 212). Logistic regressions were used to examine the effect of the Mini Mental State Exam (MMSE) and, separately, the Alzheimer’s Disease Assessment Scale-cognitive subscale (ADAS-cog) on the Alzheimer’s Disease Cooperative Study-Activity of Daily Living Inventory (ADCS-ADLI), after controlling for age and gender. A 3-point improvement on each of the two measures of cognitive function (MMSE and ADAS-cog) was taken a priori to be a clinically relevant difference between patients. Under that definition, an odds ratio (OR) of successfully performing each of 49 different activities of daily living was obtained. RESULTS: Subjects had a mean age of 75 years (SD = 8; range: 50–90) and were mostly white (92%) and female (58%). The Pearson correlation between ADAS-Cog and MMSE scores was 0.77 (p-value < 0.01). A statistically significant association (p-value < 0.05) existed between ADAS-Cog and 24 ADCS-ADLI items, and between MMSE and 22 ADCS-ADLI items. For these items, estimated odd ratios of performing an activity of daily living were 1.15 to 1.49 times more likely for every 3-point improvement in MMSE and 1.3 to 2.5 times more likely for every 3-point improvement in MMSE. A 3-point improvement in ADAS-Cog (MMSE) reflected an average increase of 27% (62%) in the odds of performing an activity of daily living. CONCLUSION: Linking clinically relevant differences on two common measures of cognitive functioning (MMSE and ADAS-cog) to activities of daily living can enhance the interpretation of these measures.

PNL2

OXCARBAZEPINE REDUCES HOSPITALISATIONS FOR EPILEPTIC SEIZURES AND RELATED SYMPTOMS IN THE NETHERLANDS: A PHARMO STUDY

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OBJECTIVES: The purpose of this study is to investigate the incidence of hospitalisations for epileptic seizures and related events before and after the start of therapy with oxcarbazepine. METHODS: All patients using oxcarbazepine or any other anti-epileptic drug are selected (Jan 1991–Jan 2001) from the PHARMO Record Linkage System, a patient-centric database including complete histories of drug use and hospitalisations for more than 1.6 million residents in The Netherlands. Information collected included diagnosis, drug type and daily dosage, legend duration of use, drug costs, reasons for hospital admission and discharge, and resources used during hospital stay. Patients had to have at least 1 year of data before and after their first oxcarbazepine prescription (index date), and had to have been on oxcarbazepine therapy for at least one year. Poisson regression analysis was applied to estimate the incidence density rates as proxy for the relative risk of hospitalisation while on and off therapy with oxcarbazepine. RESULTS: This study included 360 patients using oxcarbazepine and show that the incidence rate of hospitalisations for epileptic seizures and related events decreased significantly during the first year after the start of oxcarbazepine compared to the 1-year period before the start of treatment with oxcarbazepine. During the year prior to receiving oxcarbazepine therapy, 117 hospitalisations per 1000 person years (n = 41) were observed in the study patients compared with 40 hospitalisations per 1000 person years (n = 11) after initiating oxcarbazepine therapy, yielding a relative risk of 0.3 (95% CI: 0.2–0.7). CONCLUSIONS: Treatment with oxcarbazepine significantly reduces the occurrence of epilepsy-related hospitalizations.

NEUROLOGICAL/GENETIC DISORDERS (Migraine, Alzheimer's, Parkinson's, MS, Epilepsy, Brain Injury, Hunter Syndrome, Insomnia)

NEUROLOGICAL/GENETIC DISORDERS (Migraine, Alzheimer's, Parkinson's, MS, Epilepsy, Brain Injury, Hunter Syndrome, Insomnia)—Cost Studies

PNL3

PREDICTORS OF LOST PRODUCTIVITY AMONG EMPLOYEES WITH MIGRAINE HEADACHES IN A MEDICAL GROUP MANAGING PROGRAMS

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OBJECTIVE: Determine predictors of reduced productivity (absenteeism and presenteeism) among employees experiencing migraines. METHODS: Seven hundred twelve Health Risk Assessment surveys were distributed to health care workers in a large, multispecialty medical group in Southern California; 455 returned (64% response rate). One hundred eighty met IHS migraine criteria (defined by severity and frequency of symptoms). Respondents were 92% female; mean age of 37. Migraineurs were asked about absenteeism (full and partial days missed due to headache) and presenteeism (days worked with headache and self-reported productivity with headache) over the most recent 4-week period. RESULTS: A total of 68.3% (n = 123) of migraineurs reported some level of productivity loss, with a mean of 14.2 hours. A hierarchical stepwise multiple regression was conducted to identify significant predictors of productivity loss. With frequency and severity of migraines, and use of triptans and prescription pain medication blocked into the equation on the first step (R² of 23%) as clinical predictors, self-care activities (maintain regular sleep cycle, eat regularly, control diet to avoid triggers) and employee confidence in ability to control headaches (as employee predictors) added R² of 9.6%, for a total R² of 32.6% in productivity loss. As contrasted with employees reporting low confidence in ability to control headaches, their counterparts with high confidence had 11.6 fewer hours of lost productivity (P < 0.05). Employees actively engaged in self-care management activities (vs. not) experienced 5.3 fewer hours of lost productivity (P < 0.05). Among employee subgroup (n = 41) under current professional treatment for headaches, those satisfied with the provider’s skill in helping them gain control of headache symptoms were significantly less likely to experience reduced productivity versus their dissatisfied counterparts (12.3 versus 23.3 hours, P < 0.10). CONCLU-
SIFICATION: The results of this employee survey demonstrate that beyond migraine severity and medication therapy, there are potentially modifiable employee and provider factors, which significantly reduce lost productivity associated with migraines.

IMPACT OF MIGRAINE AND NON-MIGRAINE HEADACHES ON EMPLOYEE PRODUCTIVITY IN A MEDICAL GROUP SETTING
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OBJECTIVES: Determine prevalence of employees (via self-report) experiencing migraine (MID) and non-migraine (NMIG) headaches; and extent of reduced productivity (absenteeism and presenteeism) in MIG and NMIG groups. METHODS: A total of 712 Health Risk Assessments were distributed to health care workers in a large, multispecialty medical group in Southern California; 455 returned (64% response rate). Respondents were 87% female; mean age of 45. Responders classified into no headache, migraine (defined by severity and frequency of symptoms using IHS criteria), and non-migraine. Headache sufferers were asked about absenteeism (full and partial days missed due to headache) and presenteeism (days worked with headache and self-reported productivity with headache) over the most recent 4 week period. RESULTS: Twenty-five percent reported having no headaches in past 6 months, 35% had non-migraine headaches, and 40% had migraines. Combining absenteeism and presenteeism, 68.3% MIG and 44.7% NMIG sufferers reported productivity loss due to headaches in the prior 4 week period. MIG sufferers reported a mean of 9.72 hours of lost productivity, of which 8.13 hours were due to presenteeism. NMIG employees reported a mean of 3.94 hours of lost productivity, of which 3.37 were due to presenteeism. On annualized basis, employees with migraines lost total of 15.85 days: 13.21 days due to presenteeism, 1.78 days due to full missed work days and 0.86 days due to partial missed days. The annual cost to the medical group for lost productivity for headache employees is $887,976 ($1247 per employee): $645,161 for MIG sufferers and $229,815 for NMIG employees. CONCLUSIONS: The results of this employee survey demonstrate that migraine headaches are both prevalent and expensive condition for an employer. The magnitude of the cost is surprisingly large in a health care organization with employees who would be assumed to be fairly sophisticated and have ready access to physicians for diagnosis and treatment.

COST-EFFECTIVENESS ANALYSIS OF RIZATRIPTAN AND SUMATRIPTAN VS. CAFERGOT IN THE ACUTE TREATMENT OF MIGRAINE
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Both ergotamine and triptans are currently used in the treatment of acute migraine. Ergotamine is a traditional therapy with lower drug acquisition cost and less headache recurrence. It has been showed that triptans are more efficacious than ergotamine. But their high acquisition costs and the short duration of action remain as their major disadvantages. OBJECTIVE: The purpose of this study is to provide a comparison of cost-effectiveness of rizatipran and sumatriptan with Cafergot in the treatment of acute migraine attack. METHODS: Three separate models were developed based on a decision tree (Model 1: rizatipran vs. Cafergot; Model 2: sumatriptan vs. Cafergot; Model 3: rizatipran vs. sumatriptan). Time horizon was one year. Cost-effectiveness analysis was conducted from the societal perspective using data from the literature. All costs were converted to year 2003 dollars. The CE ratio was expressed in incremental cost/incremental QALYs. RESULTS: Base case evaluation showed that both rizatipran and sumatriptan dominated Cafergot (provide the cost differences and QALY differences for the different Meds). Sensitivity analysis showed that the CE ratios were sensitive to moderate changes in effectiveness of triptans. The study further showed that rizatipran is more cost-effective than sumatriptan, as evidenced by the negative CE ratio. Cost-effective ratios are not sensitive to changes of key variables, which include efficacy, utility, drug costs, hospitalization cost and patient preference over alternative therapies. CONCLUSION: Rizatipran and sumatriptan are both more cost-effective than Cafergot in the treatment of acute migraine attack. Rizatipran also dominated sumatriptan. Additional quality of life studies are needed to confirm the benefit from using triptans in management of migraine.

COMPARISON OF CLINICAL EFFICACY AND COST-EFFECTIVENESS BETWEEN ELETRIPTAN 40 MG AND SUMATRIPTAN 100 MG IN THE ACUTE TREATMENT OF MIGRAINE
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OBJECTIVES: The objectives of this study were to compare the clinical efficacy and cost-effectiveness of eletriptan 40mg vs. sumatriptan 100mg for the acute treatment of migraine attack. METHODS: Data were extracted and pooled from three randomized head-to-head clinical trials comparing the efficacy of eletriptan 40mg and sumatriptan 100mg. Three composite measures of treatment success were used based on sustained response (no recurrence of moderate to severe headache or use of rescue medication from the stated time period to 24 hours post-dose): 1-hour sustained response, with improvement of headache pain from moderate to severe at baseline to mild or absent  within 1 hour; 2-hour sustained response, with improvement to absent or mild pain within 2 hours post-dose; and 2-hour sustained pain-free, with improvement to pain-free within 2 hours. The cost per successfully treated patient (CPSTP) was calculated for each outcome based on the wholesale acquisition cost (WAC) for each medication (AnalySource®, September 2003). The 95% confidence interval (CI) was calculated using bootstrapping technique. RESULTS: Eletriptan 40mg was superior to sumatriptan 100mg across each of the three outcomes: 1-hour sustained, 20% vs. 15% (P < 0.01); 2-hour sustained, 41% vs. 34% (P < 0.001); and 2-hour sustained pain-free, 22% vs. 15% (P < 0.0001). The CPSTP was lower for eletriptan than sumatriptan for all three measures: 1-hour sustained response, $81 vs. $129; 2-hour sustained, $40 vs. $57; 2-hour sustained pain-free, $74 vs. $133. CONCLUSIONS: Eletriptan 40mg had consistently greater positive clinical impact than sumatriptan 100mg in the acute treatment of migraine. The greater efficacy and lower recurrence rate also translated into better cost-effectiveness.

A RETROSPECTIVE CLAIMS ANALYSIS OF THE DIRECT COSTS OF MIGRAINE AND ITS COMORBID CONDITIONS IN TAIWAN
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