that approximately one in ten had to change their employment status in order to look after the patient, usually a reduction in the number of hours worked. Half of the caregivers who had reduced their work hours reported a subsequent loss in income (ranging from €575 per month in France to €170 in the UK). 113 caregivers (13%) indicated they had sought help through or been referred on to a clinic provided by their caregiver role, most frequently anxiety, depression and/or insomnia. Caregivers also reported significant impact on their social lives with 51% recording a decrease in social activities and a quarter mentioning reduced fitness. The emotional burden of caring for a loved-one suffer is high; however, the financial and physical health implications of being a caregiver should not be underestimated.

MENTAL HEALTH – Health Care Use & Policy Studies

DAILY AVERAGE CONSUMPTION AND AVERAGE DAILY COSTS OF DULOXETINE, VENLAFAXINE-XR, AND PREGABALIN AMONG US COMMERCIALLY INSURED PATIENTS

OBJECTIVES: The purpose of this study is to examine DACON for duloxetine across its US-approved indications in major depression disorder (MDD), generalized anxiety disorder (GAD), diabetic peripheral neuropathic pain (DPNP), or pregabalin during 2006 and 2007 was conducted. MDD and GAD patient subgroups were constructed for duloxetine and venlafaxine-XR and predugalin. METHODS: A retrospective analysis of commercially insured patients from large US health plans receiving ≥1 prescription for duloxetine, venlafaxine-XR, or pregabalin during 2006 and 2007 was conducted. MDD and GAD patient subgroups were constructed for duloxetine and venlafaxine-XR and DPNP and FM for duloxetine and pregabalin. Subgroup assignments were based on ICD-9 diagnosis codes recorded during the 12 months prior to the first prescription for each index medication during the study interval. DACON was calculated by dividing total units dispensed by total days of supply. Units-per-day were converted to costs-per-day using June 2009 new wholesale prices. RESULTS: A total of 79,119 duloxetine, 97,369 venlafaxine-XR, and 59,512 pregabalin patients were included in the 2007 analysis. DACON for duloxetine was 1.31 capsules per day, ranging between 1.27 for DPNP, 1.33 for GAD, 1.39 for FM, and 1.52 for MDD. Average daily costs for duloxetine was $5.20 varying from $5.07 (DPNP) to $6.06 (MDD). DACONs for venlafaxine-XR and pregabalin were 1.61 and 2.49, respectively. Duloxetine and pregabalin had similar average daily costs among patients with DPNP or FM, while the numbers were significantly lower for duloxetine than venlafaxine-XR among patients with MDD or GAD. Results for 2006 were similar. CONCLUSIONS: Duloxetine has stable DACON across disease states and over time. Average daily costs were similar for duloxetine and pregabalin, but better for duloxetine versus venlafaxine-XR. First DataBank’s National Drug Data File™ accessed via Analysys Online, June, 2009.

SOCIODEMOGRAPHIC FACTORS AND TOXIC HABITS RELATED TO STUDENT DRUG USE: THE CASE OF THE TECHNOLOGICAL EDUCATIONAL INSTITUTE OF ATHENS

OBJECTIVES: The academic area of the Tertiary Education constitutes an important field of adjustment and transition of the young in the post adolescenc age with particular tensions, pressures and stress. The objectives of this study are to focus on the extent of drug use in this student community and the investigation of the relationship between socioeconomic factors, toxic habits and drug use. METHODS: The sample was selected out of a population of 27,930 students according to stratified sampling weighted by gender, department and semester. The sample size was 829 students, that is sufficient for the estimation of the proportion of users with a significance level of 0.05. The questionnaire comprised 81 items concerning sociodemographic and economic characteristics, adjustment to the academic environment and use of substances. RESULTS: A total of 163 persons, (19.4%) have used drugs at least once. There are significant differences (p < 0.01) between users and non users concerning: gender, relations between parents, satisfaction on study, alcohol use, smoking, number of cigarettes/day, friends that are drug users, age of smoke beginners, spending the night. Discriminant analysis has indicated that the discriminant factors between dependents/non a crucial phase, before dependence and non users are: friends that are drug users (0.707), alcohol use (0.627), age of smoke beginners (0.608), relationship between parents (0.392). CONCLUSIONS: It is evident the resulting relationship between illegal and legal psychotropic substances. Consequently, prevention programs should not ignore tobacco and alcohol use. Additionally it is evident the predominant role of the social environment in the use of substances.

BENZODIAZEPINE USE AMONG FREQUENT ATTENDERS TO EMERGENCY DEPARTMENTS: A NATIONWIDE STUDY IN TAIWAN

OBJECTIVES: Benzodiazepines (BZDs) as anxiolytics, sedatives and hypnotics are frequently prescribed in daily medical practice worldwide and their abuse also becomes a target of growing health concerns. Because frequent attenders to emergency departments (EDs) sometimes display different psychological features, the utilization pattern of BZDs among this group of patients deserves investigations. METHODS: The data sources came from the historical claims datasets of 1,000,000-person cohort (LHI-NHS) in 2007, offered by the National Health Insurance Research Database in Taiwan. BZDs were defined as those drug items belonging to groups of N03A, N05BA, N05CD and N05CF in the ATC (Anatomath Medicinal Chemical) classification system. For each beneficiary, the annual numbers of visits to EDs of hospitals and ambulatory visits to visiting clinics and outpatient departments of hospitals (excluding visits to dentistry and traditional Chinese medicine) with BZDs prescriptions in 2007 were calculated. RESULTS: Among the valid 962,768 beneficiaries of the 1,000,000-person cohort, 157,863 (16.4%) patients (96,004 females and 61,861 males; mean age 52.0 ± 17.8 [SD] years) had received BZDs during ambulatory visits and 156,259 (16.2%) patients (76,444 females and 79,815 males; mean age 38.3 ± 23.5 [SD] years) had visited EDs in 2007. Among the 806,509 beneficiaries who did not visit EDs in 2007, only 14.5% (n = 116,534) had ever received BZDs at ambulatory visits and 156,259 (16.2%) patients (76,444 females and 79,785 males; mean age 38.3 ± 23.5 [SD] years) had visited EDs in 2007. Among the 806,509 beneficiaries who did not visit EDs in 2007, only 14.5% (n = 116,534) had ever received BZDs at ambulatory visits during the year. In contrast, 26.4% (n = 43,131) of the ED attenders had received BZDs: the percentage rose from 22.6% in one-time ED attendees to 78.8% in those having more than 12 ED visits in a year. CONCLUSIONS: The use of BZDs was strongly associated with ED visits in Taiwan. Further stratified analyses are required to elucidate this phenomenon.

POTENTIAL ABUSE OF COMBINATION ANALGESICS: A DATABASE ANALYSIS

OBJECTIVES: Medicine abuse is defined as the recurrent use of a medicine in a non-medical manner for non-medical purposes. The potential for abuse of combination (polycomponent) analgesics is high. The primary aim was to detect the potential abuse of combination analgesics using a medicine claims database. METHODS: An analysis of the South African combination analgesic market was made. Thereafter, a retrospective case-cohort drug utilization study was conducted the anaphylactic database of a medical aid administrator. The medicine file contained 1,577,717 records for 2007. RESULTS: From the analysis of the combination analgesics available, it was found that there were 21 Schedule 5 (prescription-only) tablet formulations (trade names) containing the following identical active ingredients: 320 mg paracetamol, 8 mg codeine phosphate, 32 mg caffeine and 50 mg meperidine. From the database study, a total of 145,372 analgesics were prescribed (36.82% were available without a prescription). Combination analgesics accounted for 30.21% of all analgesics prescribed (92,181 products at a cost of R2,784,484). Analgesics were often prescribed on an acute basis in excessive quantities, for example, 200 mg of an anti-inflammatory analgesic tablets and capsules were also often dispensed to children in large quantities. For example, 10 prescriptions for 100 tablets of an over-the-counter combination analgesic and eight prescriptions for 100 capsules of a prescription-only combination analgesic, were dispensed to children under seven years, while a syrup (a more suitable dosage form) was available. There was furthermore concern about the quantities of analgesics prescribed to specific families and it was clear that if the medical aid benefit of one family member was exhausted, the analgesic was claimed under another family member’s name. A number of prescribers were identified who were over-prescribing specific analgesics. CONCLUSIONS: A medical aid database can be used to detect analgesic abuse and guidelines to control abuse and cost were proposed.
**PARIS ABSTRACTS**

The price sensitivity analysis of comparators was done. The reassessment of CEA after price cut of comparators (up to—10%, due to international price referencing) has shown the positive results for galantamine and robustness of previous price sensitivity analysis. CONCLUSIONS: The focus of the MoH drug policy is on more rational spandings, especially on reference pricing and HTA. There are first results of these new procedures, where the real impact of the HTA in the decision processes is demonstrated. Galantamine, a new agent in therapy of depression fulfilled, the necessary legislative conditions including pharmacoeconomic aspects to be listed in the positive reimbursement list.

**PREDICTORS OF DULOXETINE TREATMENT FOR PATIENTS WITH MAJOR DEPRESSIVE DISORDER IN VETERANS AFFAIRS HEALTH CARE NETWORK**

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OBJECTIVES: To examine whether non-generic duloxetine and venlafaxine XR are essentially interchangeable in patients with major depressive disorder (MDD) or used selectively for patients with different treatment histories, costs, demographics, and comorbidities.

METHODS: Using the US PharMetrics Database, we studied commercially insured individuals aged 18–64 initiating treatment with duloxetine or venlafaxine XR between July 2005 and July 2006, with 21 prior MDD diagnosis and continuous enrollment for 12 months prior to initiation date. Initiation was defined as the first use of either medication preceded by 3 months no prescription for or use of the same medication. Chi-square and logistic regression analysis of patients’ demographics, past-year medication use, and comorbidities were used to assess predictors of initiations with duloxetine versus venlafaxine XR. RESULTS: A total of 3964 patients (71.6% female) initiated treatment with duloxetine and 8141 (71.5% female) with venlafaxine XR. Compared to venlafaxine XR patients, duloxetine patients were older (45 vs. 42.4 years), had 23 unique prior pain medications (25.5% vs. 15.6%), SSRI (59.5% vs. 52.7%), TCAs (12.6% vs. 7.8%), analgesics (63.1% vs. 51.3%), anticonvulsants (30.1% vs. 17.9%), hypnotics (30.2% vs. 22.3%), and had 28 unique comorbid medical conditions (38.6% vs. 29.1%) and pain diagnoses (76.3% vs. 67.8%) (all p-values <0.001). Logistic regression results revealed that 61% of duloxetine initiators and 63% of venlafaxine XR initiators were predictable from prior patient and treatment factors. The prior 6-month total health care costs were $1731 higher for future duloxetine patients than for future venlafaxine XR patients, and despite higher subsequent pharmacy costs, total health care costs declined for both medications following initial use with each drug began. CONCLUSIONS: MDD patients treated with duloxetine tended to have a more complex and costly antecedent clinical presentation compared with venlafaxine XR-treated patients, suggesting physicians do not use the two medications interchangeably and both may have unique roles on formularies.

**PREDICTORS FOR DULOXETINE TREATMENT WITH DULOXETINE TREATMENT FOR PATIENTS WITH MULTIPLE SCLEROSIS AND THE NUMBER AND SEVERITY OF RELAPSES**

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OBJECTIVES: The aim of this study was to evaluate the efficacy for FDA approved drugs for Alzheimer’s disease. METHODS: MEDLINE, EMBASE, and Pharmaceutical Abstracts databases were searched for studies addressing functional outcomes with Alzheimer’s disease. The primary outcome was cognitive efficacy and must have been measured on a validated scale. To report one consistent scale value, values were transformed into a-scores to obtain a dichotomized output, categorized as either improvement or a lack therof in treatment. Odds ratios were calculated for success for each drug treatment. Winbugs version 1.4 statistical software was used to conduct a mixed treatment comparisons Bayesian analysis along with a sub-analysis to examine whether or not the cognitive measurement scale used in the studies effects the ranking of drug treatments. RESULTS: The mixed treatment comparisons results showed that galantamine OR = 2.518, 95% CRI: 0.875–7.018 was highly favored above all other Alzheimer’s treatments, followed by donepezil OR = 1557, 95% CRI: 315.4–8341, tacrine OR = 212.8, 95% CRI: 37.48–1604, rivastigmine OR = 22.57, 95% CRI: 2.397–2148, memantine OR = 3.775, 95% CRI: 0.639–23.09 compared to placebo. The sub-analysis also showed that galantamine OR = 2.832, 95% CRI: 48390.2–326E+10 as highly favored, but yielded slightly different results with tacrine OR = 1453, 95% CRI: 148.2–15830 ahead of donepezil OR = 471.2, 95% CRI: 83.48–291 in ranking, followed by rivastigmine OR = 19.54, 95% CRI: 1.781–83.19 and memantine OR = 2.836, 95% CRI: 0.216–37.96. The analysis removed the eight studies that did not use the ADAS-Cog measurement scale, suggesting that the selection of the cognitive measurement scale changes the ranking of drug treatments. Odds ratios for galantamine were high due to the favorable response (295) for the drug. The severity of Alzheimer’s disease was not taken into account in this study. CONCLUSIONS: The consistency between drugs in terms of cognitive efficacy is present in all five drugs; all demonstrating effectiveness over placebo. Future research in this area is needed, including clinical studies comparing the agents directly.

**RELATIONSHIP BETWEEN ADHERENCE TO INTERFERONS TO TREAT MULTIPLE SCLEROSIS AND THE NUMBER AND SEVERITY OF RELAPSES**

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OBJECTIVES: The aim of this meta-analysis was to evaluate the efficacy and tolerability of Natalizumab in relapsing multiple sclerosis (MS). METHODS: Mean change in Expanded Disability Status Scale (EDSS), “number of patients with at least one relapse”, and “number of patients with at least one new gadolinium (Gd)-enhancing lesion” were the key outcomes of interest for assessment of efficacy. “Any adverse events”, “serious adverse events”, “death”, and “withdrawal because of adverse events” were the key outcomes for tolerability. RESULTS: Amongst existing trials, four randomized placebo controlled clinical trials met our criteria and were included.

**NEUROLOGICAL DISORDERS – CLINICAL OUTCOMES STUDIES**