239 patients on eight different insomnia medications were included: alprazolam (30), amitriptyline (33), eszopiclone (30), melatonin (30), quetiapine (30), temazepam (27), trazodone (30) and zolpidem (29). The mean age (SD) of the patients was 49.3 years (SD = 11.8): 78.2% were female, 68.6% Caucasian, 23.0% Hispanic and 2.9% Black. The TSQM domains had good internal consistency, with Cronbach’s alpha for all domains exceeding 0.83. After adjusting for patient age, race, gender, self-reported severity and Bonferroni correction for multiple comparisons, patients on products for secondary insomnia expressed lower TSQM scores than patients on products for primary insomnia. Some differences were also observed when comparing TSQM scores for individual medication with the mean score from all patients. For example, patients on amitriptyline had a significantly lower score on effectiveness (p = 0.044) while patients on quetiapine had a significantly lower score on side effects (p = 0.0005). CONCLUSIONS: When selecting an insomnia medication, clinicians should consider the patient’s underlying condition as well as differences in patient satisfaction with insomnia medications.

NEUROLOGICAL DISORDERS—Health Care Use & Policy Studies

TRENDS IN RESEARCH INTO CENTRAL NEUROVASCULAR SYSTEM DISORDERS: THE INFLUENCE OF AN AGING POPULATION
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OBJECTIVES: One of the consequences of an aging population is the emerging importance of genetically-linked disorders which develop in later life. Many of these disorders affect the central nervous system and result in progressive degeneration of higher functions and dementia. This research expands on observations described in a previous presentation (PNC53, ISPOR 2008) concerning the influence of genetic discoveries on the number of probable RCTs in Alzheimer’s disease (AD) and Huntington’s disease (HD) to explore other measures of interest. METHODS: A citation search was conducted in Medline for the years 1951 to 2005 (5-yearly time periods). Search filters for RCTs, economic studies (ES), and observational studies (OS) (www.sign.ac.uk/methodology/filters.html) combined with search strings incorporating the MeSH terms for each disorder were run to provide an estimate of interest in these disorders. The x-fold increases (2001–2005/1976–1980) were calculated and the data were analysed using logistic regression. RESULTS: There were 12,820,265 publications during 1951 to 2005, with 57,466 relating to AD and 8304 relating to HD. Over the past 30 years the interest in AD has been increasing, with 62-fold increases in the number of papers published within this disease area. In contrast, during the same time period publications in HD showed only a 4-fold increase. This disparity is particularly notable for probable RCTs, where there were 405-fold increases in AD but only 5-fold increases in HD. Interestingly the interest in AD predates the identification of several genetic linkages that occurred in the late 1990’s. Conversely, the discovery of huntingtin in 1993 appears to have had little effect on interest in HD. CONCLUSIONS: Improvements and advances in sanitation, nutrition and immunisation against infectious diseases have combined with other factors to reduce mortality and prolong life expectancies. One of the most important consequences of increased life expectancy is the emergence of genetically linked disorders which develop in later life. Discovery of genetic linkage does not appear to be a strong predictor of research activity, in the case of AD and HD.

EFFICIENCY PROFILE IN THE NEUROLOGICAL REFERRALS EFFECTUATE REFERENCE SPECIALISTS: USE CASE-MIX SYSTEM ADJUSTED CLINICAL GROUPS
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OBJECTIVES: To determine the general referral and neurologi-cal rate per center and the adjusted efficiency indexes, through the retrospective implementation of the Adjusted Clinical Groups (ACG) in a primary care setting. METHODS: Design multicenter-retrospective study. Attended patients by five primary care teams (PCT) during the year 2006 were included. The main measurements were general parameters, age, gender, dependent (visits and episodes) and morbidity of each patient relative to each ACG. The referral rate was defined as the quotient between the number of referrals and the visits made. Efficiency Index (EI) was established dividing the observed by the expected referrals obtained by indirect standardization. Statistical significance: p < 0.05. RESULTS: Studied patients 80775 (use: 72.4%), 4.8 ± 3.5 episodes and 7.9 ± 8.2 visits/patient/year. Percentage of visits with a referral was 9.0% (confidence interval [CI]: 8.8–9.2), age: 44.8 ± 22.8 years (women: 54.6%).

UTILIZATION PATTERNS OF ANTIEPILEPTIC DRUGS: AN ITALIAN PRESCRIPTION DATABASE ANALYSIS
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OBJECTIVES: To assess the AntiEpileptic Drugs (AED) usage and the prevalence of AED users in Campania, a region of approximately 5.8 million inhabitants in the south of Italy during the years 2005–2006. METHODS: We collected, from an electronic research database, all prescriptions for AEDs reimbursed in the years 2005–2006 in 8 local-health-authorities (70% of the overall population) of Campania. We calculated the number of subjects receiving more than a single AED prescription, to estimate the annual prevalence of AED users. Therefore we excluded users of morphine-like analgesic (ATC-code N02A). Annual prevalence of AED use was assessed in the entire sample, stratified by drug type and age group. RESULTS: We identified 107,959 subjects. The estimated crude 1-year prevalence of AED use increased from 16.6/1000 (53.0 % female) in 2005 to 19.5/1000 (54.4 % female) in 2006. Prevalence increased with age for both genders. Prevalence of AED use increased from 5.9/1000 in 2005 to 8.7/1000 in 2006 for ‘new’ AEDs while was stable for ‘old’ AEDs (8.4/1000 in 2005, 8.2/1000 in 2006), excluding association between old-new and switchers. The most frequent regimens were all monotherapy: phenobarbital, gabapentin, valproic acid, carbamazepina, lamotrigina were the most common AED in monotherapy in 2005, pregabalin became first in 2006 when gabapentin went off-patent. CONCLUSIONS: The results of the study indicate an increasing prevalence of AED use with special reference to ‘newer’ compounds. The increase is mainly due to pregabalin, marketed in the end of 2004 with indications for epilepsy and neuropathic pain. Excluding pregabalin and gabapentin, commonly used for the treatment of neuropathic pain, older AEDs are the most frequent regimens. Probably older AEDs remain the first line treatment for epileptic disorders. This claim is in accordance with a previous study conducted in Italy from a General-Practitioners database (Savica et al., European Journal of Neurology, 2007).
p < 0.001. The average of referrals was of 70.5 per 100 attended-patients/year (p < 0.001). 2.5% referrals of the total were made to the neurological, being patient of greater age, with predominance of women and displaying the head pain/migraine as main consultation reason. Visits and episodes explain 43.2%-73.9% respectively (p < 0.001), the explanatory power of the classification’s variability was of 46.3% (p = 0.001) and the referral 20.1%. EI per center were: 0.97 (CI: 0.77–1.18), 0.79 (CI: 0.57–1.01), 0.88 (CI: 0.62–1.14), 1.29 (CI: 0.94–1.65) and 0.91 (CI: 0.58–1.25), p = 0.023 (family practice) and 0.90 (CI: 0.47–1.33), 0.78 (CI: 0.35–1.21), 0.93 (CI: 0.43–1.44), 1.21 (CI: 0.60–1.82) and 0.97 (CI: 0.39–1.56), p = 0.031 (pediatrics) respectively.

CONCLUSIONS: Adjusted morbidity by ACG explains an important part of the referrals variability. A low percentage was derived to neurology. The study results must be interpreted cautiously even after adjustment by age, gender and morbidity. Should the results be confirmed it would allow an improvement in the measurement of referrals for clinical management in the PCT.

**PND30**

**NATIONAL GUIDELINE FOR MULTIPLE SCLEROSIS TREATMENT IN BRAZILIAN PUBLIC HEALTH: AN ANALYSIS OF TREATMENT PATTERNS AND BUDGET IMPACT**

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OBJECTIVES: To determine the budget impact of treatment patterns for Multiple Sclerosis (MS) based on national guideline.

METHODS: A one-year (October 2006 to September 2007) retrospective database search was conducted to identify medication used, costs, patient adherence and provision. The source of data was the Ministry of Health public available database, called DATASUS. The study was conduct in four steps: 1) Determine the medicines codes in the public list; 2) Establish the relationships among drugs and patients usage, based on national guidelines; 3) Analyze adherence pattern in the most relevant center in Brazil, based on medication consumption; and 4) Determine the budget impact for MS treatment. RESULTS: Medication for MS was responsible by 13% of high cost medication supplied by Public Sector in Brazil. During the period of analysis the costs and number of patients grew more than 100%, in average 60,000 medications per month were supplied and a total 8,294 patients were treated. Patients treated were distributed among therapeutic alternative as follow: 60.28% to interferon-1a (two brands), 19.99% to interferon-1b and 19.74 to glatiramer acetate. Five states out of 27 were responsible by 80% of patients treated. It was possible to detect the beginning of drug association. We found that 26% of patients adhere to disease treatment.

Treatement costs was higher than USD 9 millions per month, the average of referrals was of 70.5 per 100 attended-patients/year (p < 0.001). 2.5% referrals of the total were made to the neurological, being patient of greater age, with predominance of women and displaying the head pain/migraine as main consultation reason. Visits and episodes explain 43.2%-73.9% respectively (p < 0.001), the explanatory power of the classification’s variability was of 46.3% (p = 0.001) and the referral 20.1%. EI per center were: 0.97 (CI: 0.77–1.18), 0.79 (CI: 0.57–1.01), 0.88 (CI: 0.62–1.14), 1.29 (CI: 0.94–1.65) and 0.91 (CI: 0.58–1.25), p = 0.023 (family practice) and 0.90 (CI: 0.47–1.33), 0.78 (CI: 0.35–1.21), 0.93 (CI: 0.43–1.44), 1.21 (CI: 0.60–1.82) and 0.97 (CI: 0.39–1.56), p = 0.031 (pediatrics) respectively.

CONCLUSIONS: Adjusted morbidity by ACG explains an important part of the referrals variability. A low percentage was derived to neurology. The study results must be interpreted cautiously even after adjustment by age, gender and morbidity. Should the results be confirmed it would allow an improvement in the measurement of referrals for clinical management in the PCT.

**PND31**

**DESCRIPTIVE STUDY OF THE PHARMACOLOGICAL TREATMENTS USED IN PATIENTS WITH DEPRESSION IN PARKINSON’S DISEASE (PD)**

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Depression affects around 40–50% of people with PD [Goetz 2002]. It has been argued that depression in PD can be consid-

erged to be one of the manifestations of the degenerative nature of the disease on the CNS [Shrag et al 2000]. Any differences in the aetiology and co-morbidities in depression in PD when compared to depression in those without PD may result in differences in antidepressant treatment patterns. Furthermore, certain PD drugs are metabolised in a way that may lead to their interaction with certain antidepressants. Awareness of this may impact upon prescribing decisions both for antidepressant and PD drugs in those with depression in PD. OBJECTIVES: The objective of this study is to describe the use of antidepressants in the treatment of depression in PD patients. METHODS: The study was carried out using the General Practice Research Database (GPRD). The GPRD is a database with 9 million patients’ data (3.7 million being currently active). The search identified PD patients on various rates of different antidepressants. The PD patients were diagnosed with PD from 2002 onwards. RESULTS: The study identified 18,481 patients with a diagnosis of PD; 44% of these also had a diagnosed depression (8,038 or 18,481). Of these PD patients with depression, 21% had prescriptions for Amitriptyline (1658 of 8058), 19% for Fluoxetine (1549 of 8058), 14% for Citalopram (1125 of 8058), 7% for Venlafaxine (566 of 8058) and 5% for Mirtazapine (369 of 8058).

CONCLUSIONS: This study confirms the results of previous studies that there is a high prevalence of depression in PD patients. Within a UK context, the study also identifies that a large proportion of these patients receive antidepressant treatments.

**SINGLE SYSTEMS DISORDERS—Clinical Outcomes Studies**

**PSSI**

**RISK OF PSYCHIATRIC DISORDERS AND HEALTH CARE EXPENDITURES AMONG PATIENTS WITH MODERATE TO SEVERE PSORIASIS**

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OBJECTIVES: To evaluate the risk of psychiatric disorders and associated health care expenditures among moderate to severe psoriasis (PsO) patients using data from a US health care claims database. METHODS: PsO patients and controls without PsO were identified from the PharMetrics health care claims database using the ICD-9 code of 696.x. Patients with moderate to severe PsO (N = 7971) had been diagnosed with PsO in both years 2003 and 2004, and had been treated with systemic therapies including cyclosporine, methotrexate, acitretin, biologics, or phototherapy. Controls (N = 31884) were matched with PsO cases in a 4:1 ratio by gender, age, region, and previous time-in-plan. Psychiatric disorders and anti-psychiatric therapies in year 2004 were compared between groups. RESULTS: PsO cases were equally distributed between males (50.6%) and females with mean age of 47.2 years. Almost half of the patients received anti-inflammatory drugs, 33.3% received biologic therapies, and 36.7% had phototherapy. Compared with controls, patients with moderate to severe PsO had a statistically significantly higher prevalence (p < 0.01) of anxiety (6.94% vs. 4.37%, OR = 1.63), depression (9.17% vs. 5.32%, OR = 1.80), bipolar disorder (1.10% vs. 0.51%, OR = 2.16), and delirium (0.25% vs. 0.14%, OR = 1.74). There was no difference between PsO patients and controls in the prevalence of dementia or schizophrenia (p > 0.05). Compared with controls, a greater proportion of PsO patients had been treated with antidepressants (6.12% vs. 0.90%, OR = 7.18), anti-psychotics (5.03% vs. 0.75%, OR = 7.04), anti-convulsants (5.90% vs. 0.89%, OR = 6.97) or anti-manics (4.89% vs. 0.74%, OR = 6.93). PsO patients had higher total health care