PSY4

THE POTENTIAL COST SAVINGS ASSOCIATED WITH PREVENTING THE DEVELOPMENT OF HYPERTENSION, DIABETES AND DYSLIPIDEMIA IN AN OVERWEIGHT AND OBESE POPULATION

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OBJECTIVES: The prevalence of obesity (BMI ≥30) remains above 35% and when combined with the overweight population (BMI ≥25), the age-adjusted prevalence is 68.8%. The objective was to develop a model demonstrating the cost savings associated with the prevention of hypertension (HTN), diabetes (DM), and dyslipidemia (DLP) in an overweight and obese population by treating patients with phentermine/topiramate extended-release (ER) in conjunction with lifestyle modification. **METHODS:** A 1-year model was developed using data from the National Health and Nutrition Examination Survey (NHANES), clinical trial data, and published literature. The model estimates the cost of incident cases of HTN, DM and DLP in an overweight and obese population. Rates of progression to comorbidities are based on patients who progressed from no medication use for comorbidities at baseline to at least one medication at endpoint in the CONQUER study in obese and overweight subjects with ≥2 comorbidities. The risk of progression to HTN, DM, and DLP is applied to literature-based cost estimates to calculate the per-patient annual cost savings associated with phentermine/topiramate ER compared with lifestyle modification alone. **RESULTS:** The average cost savings per patient associated with the prevention of comorbidities with phentermine/topiramate ER compared with lifestyle modification alone is $179.06, $177.44, and no savings in grade 1 (BMI ≥30), grade 2 (BMI ≥35), and grade 3 (BMI ≥40) obese populations, respectively. HTN-specific cost savings ranged from $40.20 for grade 2 obesity to $10.42 for grade 3 obesity. DM-specific cost savings ranged from $109.23 for grade 2 obesity to no savings for grade 3 obesity. DLP-specific cost savings ranged from $56.02 for grade 1 obesity to $28.01 for grade 2 obesity. **CONCLUSIONS:** This analysis suggests that treatment with phentermine/topiramate ER may be associated with cost savings by preventing the development of comorbidities in overweight or obese patients.

PSY5

MEDICAL AND PHARMACY CLAIMS-BASED ALGORITHIMS FOR IDENTIFYING PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES: This study compared different algorithms to identify patients with multiple sclerosis (MS) in claims data and recommended the most appropriate algorithm. **METHODS:** Our literature review on MS studies in claims data identified ten different algorithms to identify MS patients. Some algorithms require either MS diagnosis or MS treatment, or both; some require two or more diagnoses or treatment claims; some require evidence of other neurological conditions in addition to an MS diagnosis. These algorithms were used to identify MS patients in Truven Health MarketScan®Commercial and Medicare Supplemental Databases in 2004-2011. For each algorithm, MS prevalence rate, patients' age and gender, proportion of patients with magnetic resonance imaging (MRI) and MS treatment were examined and compared with those in published studies wherever possible. **RESULTS:** Two algorithms identified about the same number of MS patients: one algorithm required ≥2 MS diagnoses ≥30 days apart (123,064 patients were identified) and the other required ≥1 principal inpatient MS diagnosis or ≥2 MS diagnoses ≥30 days apart (123,160 patients were identified). Both populations had a mean age of 47 and 76% female, consistent with that reported in the literature (mean age: 40.9-50.3, female: 66-80%); a total of 69% of them had MS treatment. The proportion of patients with MRI increased from 41% in January 1, 2004 - February 28, 2005 to 66% in March 1, 2005 – September 30, 2011, consistent with when McDonald's criteria and update were published. These two algorithms also produced a prevalence rate of 135 per 100,000 people, same as the rate reported by Atlas of MS Database and the National MS Society. Prevalence rates based on other algorithms were either too high or too low. Thus these two algorithms were the most appropriate to identify MS patients in claims data. **CONCLUSIONS:** Comparison of available patient and epidemiological characteristics with published literature suggests that MS patients can be accurately identified in claims data.

PSY6

RELIABILITY AND VALIDITY OF CURRENT PERCEPTION THRESHOLD TEST IN MECHANICAL NECK DISORDER

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OBJECTIVES: Neck pain is a common musculoskeletal disorder, affecting a third of all adults each year. Neurological impairments exist in a severe subset of patients. These may be detected by sensory detection responses. Current Perception Threshold (CPT) testing may provide such testing but there is inadequate evidence on the clinical measurement properties of CPT testing in Mechanical Neck Disorder (MND). Therefore, the objective of this study is to evaluate the reliability and validity of CPT test in patients with MND. **METHODS:** The Study Design was a cross-sectional reliability and validity assessment. Patients with MND (N=106) were recruited after a standardized physical assessment performed by an experienced physiotherapist to establish that neck pain was related to mechanical dysfunction. The rapid CPT protocol was performed at three frequencies (5, 250, 2000 Hz) using 3 dermatomal locations on the hand. A subset of patients (N=34) was reassessed at a second visit to determine the test-retest reliability. For inter-trial reliability the fingertip of both hands was assessed. Internal consistencies of CPT between frequencies were calculated from CPT test scores in the most affected hand. Construct validity of CPT was evaluated by correlating the 3 composite scores derived the from the CPT tests with the Neck Disability Index NDI and Cervical Spine Outcomes Questionnaire (COSQ). **RESULTS:** Inter-trial reliability was good to excellent (ICC= 0.73-0.82, p<0.001). Internal consistency was satisfactory (α = 0.84-0.90, p<0.001). Test-retest reliability of CPT scores was excellent (ICC = 0.76-0.84, p<0.001). The mean retest difference and the 95% limits of agreement were: -0.3 ± 3 (in 2000Hz and 250Hz), and 0.1 ± 3.9 (in 5Hz). A small to medium-size correlation was found between CPT and NDI or CSOQ (r = 0.21-0.37). **CONCLUSIONS:** CPT was consistent across occasions; and was associated with neck disability.

PSY7

COMPARATIVE EFFECTIVENESS OF SMOKING CESSATION MEDICATIONS AMONG OBESE SMOKERS

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OBJECTIVES: To compare abstinence rates of different Food and Drug Administration (FDA)-approved smoking cessation medication strategies among obese smokers. **METHODS:** A population-based retrospective cohort study was conducted using the General Electric (GE) electronic medical record database (2006 – 2011). The cohort consisted of obese adult smokers newly initiating use of an FDA-approved smoking cessation medication (bupropion vs. varenicline). The outcome variable was abstinent versus not at 3, 6, or 12 months following first prescription. Descriptive analyses and chi-square tests were conducted to assess the frequency distribution of sample characteristics and their association with smoking cessation medication use. Multivariate logistic regression models were carried out to identify predictors of abstinence at 3, 6 and 12 months after assessing co-linearity between independent variables. Backward elimination was used to arrive at the final models. **RESULTS:** The abstinence rate of using any smoking cessation medications among obese smokers was 17.72% at 3 months, 20.61% at 6 months, and 22.51% at 12 months, respectively. While previous literature among adults reports higher abstinence rates with varenicline compared to bupropion, our findings among obese smokers indicate slightly higher abstinence rates for those using bupropion compared to those using varenicline (bupropion vs. varenicline: 20.51% vs. 16.85% at 3 months (p = 0.01); 22.87% versus 20.45% at 6 months (p = 0.09); 25.00% versus 22.84% at 12 months (p = 0.10)). Significant predictors of successful abstinence included: demographic characteristic factors (age, race, region, payment type, and specialty group), diseases (hypertension, lung cancer, depression, and alcohol dependent), utilization (weight control drug use and number of cigarettes smoke per day), smoking counseling, and baseline Body Mass Index (BMI) value. **CONCLUSIONS:** Abstinence rates were higher among obese smokers taking bupropion versus those taking varenicline. Predictors identified in this study should be considered when designing smoking cessation interventions among the high risk population of obese smokers.

PSY8

A META-ANALYSIS OF EFFICACY AND SAFETY OF PRESCRIPTION OPIOIDS, INCLUDING FORMULATIONS WITH TAMPER-RESISTANT TECHNOLOGIES, IN NON-CANCER PAIN MANAGEMENT

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OBJECTIVES: This meta-analysis was conducted to compare pain intensity and adverse event (AE) outcomes between opioids formulated with technologies designed to deter or resist tampering (tamper-resistant technologies [TRTs]) and non-TRTs for commonly prescribed long-acting opioids (LAOs) and short-acting opioids (SAOs) for treatment of non-cancer pain in adults. **METHODS:** Sixteen journal articles [13 non-TRT vs. placebo, 3 TRT vs. placebo] from a systematic literature review (9/1/2001-8/31/2011) meeting eligibility criteria were included in the meta-analyses. Summary estimates of standardized pain intensity outcomes [difference in mean change of pain intensity from baseline to end of study (DMCPI), difference in sum of pain intensity difference over the study period (DSPID)] and of odds ratios (OR) of 7 AEs were computed through random effects meta-analyses using DerSimonian-Laird method. Additional analyses included stratified analyses by treatment duration (<2 months, 2-3 months, ≥3 months) and by LAO/SAO, and indirect comparisons to contrast TRTs versus non-TRTs. **RESULTS:** Summary estimates for standardized DMCPI and for standardized DSPID indicated that TRTs and non-TRTs showed significantly greater efficacy than placebo in reducing pain intensity [(Standardized DMCPI) Non-TRT versus placebo: -0.59(95% CI: -0.94,-0.24), TRF versus placebo: -0.21(-0.35,-0.07); (Standardized DSPID) Non-TRT versus placebo: 0.73(0.26,1.20), TRF versus placebo: 0.51(0.30,0.72)]. TRTs and non-TRTs had similar safety profiles—both were associated with higher odds of AEs than placebo. ORs from indirect analyses comparing AEs for TRTs versus non-TRTs were not significant different [nausea: 0.87(0.24,3.12), vomiting: 1.54(0.40,5.97), dizziness/vertigo: 0.61(0.21,1.76), headache: 1.42(0.57,3.53), somnolence/drowsiness: 0.47(0.09,2.58), constipation 0.64(0.28,1.49), pruritus 0.41(0.05,3.51)]. **CONCLUSIONS:** Pain intensity and ORs of AEs between non-TRTs/TRTs and placebo did not vary by treatment duration and opioid formulation (p-values>0.05). TRTs and non-TRTs had comparable safety profiles and both were more efficacious than placebo in reducing pain intensity. Since TRTs are designed to reduce misuse/abuse due to tampering, they may be a means to reduce public health burden of opioid abuse.