that adjunctive treatment with aripiprazole provides health benefits compared to quetiapine and olanzapine in patients with MDD that fail to respond to conventional antidepressants. With country-specific cost-data, this model is also suited to assess the cost-effectiveness of different adjunctive strategies in MDD in different countries.

PMH12
THE COMPARATIVE EFFICACY OF INJECTABLE AND ORAL ATYPICAL ANTI精神病ICS IN REDUCING RELAPSES IN ADULT SCHIZOPHRENIC PATIENTS: A SYSTEMATIC REVIEW AND MIXED TREATMENT COMPARISON ANALYSIS
Blume S1, Naci H1, Green J1, Fleischmann J1, Gaugl M1
1United BioSource Corporation, Bethesda, MD, USA, 2United BioSource Corporation, London, MD UK, 3United BioSource Corporation, Lexington, MA, USA, 4Janssen-Cliq Germany, Neus, Germany

OBJECTIVES: To compare injectable and oral atypical antipsychotics in reducing relapses in adult schizophrenia patients. METHODS: A systematic review of literature was conducted in MEDLINE and EMBASE (January 1993-August 2009) to identify randomized controlled trials and comparative open-label studies of atypical antipsychotics performed on adult schizophrenia outpatients. Proceedings of the American Psychiatric Association Conference from 2006 to 2009 and bibliographies of identified studies and relevant reviews were also searched. Included studies had to have a clear definition of relapse (e.g. hospitalization or return to symptomatic condition), and a minimum follow-up period of 6 months. Comparators included atypical antipsychotics, typical antipsychotics, or placebo. Data extraction was validated by a second reviewer. A Bayesian mixed treatment comparison (MTC), enabling indirect comparison while respecting randomization, was performed on the rate of relapse assuming random study effects. RESULTS: Ten articles were identified and included in the systematic review and MTC. The odds ratio (OR) [95% credible interval (CrI)] of relapse relative to placebo ranged from 0.13 [0.04, 0.47] (oral risperidone) to 0.20 [0.03, 1.19] (aripiprazole) among oral atypical agents, and 0.29 [0.07, 1.12] for typical agent haloperidol. The OR [95% CI] of relapse of injectible risperidone relative to oral formulations of atypsicals ranged from 0.28 [0.05, 1.24] (aripiprazole) to 0.41 [0.12, 1.01] (olanzapine). Injectable risperidone had lower odds of relapse than olanzapine, quetiapine, risperidone, ziprasidone, combination therapy, haloperidol, and placebo with probabilities > 95% and quetiapine XR, clozapine, and ziprasidone with probabilities > 85%, 90%, and 93%, respectively. Findings were robust to varying trial durations and responder definitions. CONCLUSIONS: Injectable antipsychotics offer similar benefits to oral antipsychotics in reducing relapse rates. Statistical and clinically important differences in relapse rates exist between oral and injectable formulations of atypsicals in favor of injectable risperidone.

PMH13
CHARACTERISTICS AND COST OUTCOMES OF INSURED PATIENTS TREATED WITH EXTENDED-RELEASE NATLXETRONE (XR-NTX) OR ORAL ALCOHOL DEPENDENCE MEDICATIONS
Mark TL1, Gastfriend DR2, Kranzler HR3, Chalk M4, Montaglio L4
1Thomson Reuters, Washington, DC, USA, 2Akeeras, Inc. Cambridge, MA, USA, 3University of Connecticut School of Medicine, Farmington, CT, USA, 4Treatment Research Institute, Philadelphia, PA, USA

OBJECTIVES: There are four FDA-approved alcoholism medications: disulfiram, naltrexone, acamprosate, and extended-release naltrexone (XR-NTX). This study used observational data to evaluate the utilization and cost outcomes of insured patients treated with XR-NTX or other medications (or no medication). Data were from Thomson Reuters’s MarketScan Commercial insurance claims database which contains information from millions of enrollees annually. Outcomes were measured six months after index and included medication possession ratio (MPR), detoxification admissions and days, alcohol-related admissions and days, ED visits, psychiatric and substance abuse outpatient visits and charges for detoxification and alcohol-related inpatient stays. Two sets of analyses were conducted: 1) Persons with an alcohol use disorder and no use of any alcohol medication (n = 4,047) were compared to persons with an alcohol use disorder and use of any of the four medications (n = 4,730). The samples were propensity-score matched on demographics, clinical characteristics and prior use of alcohol and psychiatric services, and 2) The four medications were compared (XR-NTX n = 275; naltrexone n = 2064 acamprosate n = 3086; disulfiram n = 2076) using inverse probability weighting. RESULTS: The probability of any detoxification admission, alcohol-related admission, and ED visit and a substance abuse or psychiatric inpatient stay was significantly higher among no medication users than medications users. XR-naltrexone users had a significantly higher MPR than acamprosates users. Patients using any medication had fewer detoxification days and alcohol-related inpatient days. Among medication users, XR-NTX was associated with significantly lower detoxification costs (per 1000 patients over 6 months) versus oral naltrexone, disulfiram and acamprosate (Detox: $0.60-million vs. $1.48-million, $1.08-million, $1.40-million, respectively; P < 0.01 for XR-NTX vs. naltrexone and acamprosate). CONCLUSIONS: Individuals receiving alcoholism medications had significantly lower substance abuse and psychiatric inpatient stays and substantially lower detoxification and hospitalization utilization rates than similar patients who received no medication. Of the approved medications, XR-TX had lower costs for detoxification and alcohol hospitalization days.

PMH14
ALL-CAUSE TREATMENT DISCONTINUATION FOR OLANZAPINE COMPARED TO OTHER ANTIPSYCHOTICS IN THE TREATMENT OF SCHIZOPHRENIA: A META-ANALYSIS
Seon Je Kim1, Richard Emsley2, Leslie Litsky2, David J3, Ascher-Svanum H4
1Enhance Reviews, Ltd., London, England, UK, 2Eli Lilly and Company, Indianapolis, IN, USA, 3University of Illinois, Chicago, IL, USA

OBJECTIVES: Treatment discontinuation has been increasingly used as a quantifiable tool for measuring the overall effectiveness of antipsychotic medications, including efficacy, safety, and tolerability of a drug. While results have been inconsistent, several studies have found that olanzapine and other second-generation antipsychotics (SGA) are more effective in the treatment of schizophrenia compared to first-generation antipsychotics (FGA). This meta-analysis compared time to and rate of treatment discontinuation of antipsychotics in schizophrenia. METHODS: Electronic search strategies identified all relevant papers on the topic published up to April 2009. Randomized controlled trials (RCTs) and observational studies that compared olanzapine with SGAs and/or FGAs for patients with schizophrenia were included in the meta-analyses. Hazard ratios (HR), Relative Risks (RR) and their associated 95% confidence intervals (CI) were extracted. RESULTS: There were 60 RCTs (N = 33,360) and 27 observational studies (N = 202,591) included. The meta-analysis of time to discontinuation revealed that olanzapine was significantly better as compared to aripiprazole, quetiapine, risperidone, ziprasidone, and perphenazine within randomized trials and better than amisulpride, risperidone, haloperidol, and perphenazine within observational studies. Discontinuation rates in the RCTs were significantly lower for olanzapine compared to all antipsychotics except for clozapine. In the observational studies, olanzapine had significantly lower discontinuation rates than aripiprazole, quetiapine, haloperidol, and placebo with probabilities > 95% for olanzapine XR, clozapine, and ziprasidone with probabilities > 85%, 90%, and 93%, respectively. Findings were robust to varying trial durations and responder definitions. CONCLUSIONS: In both randomized trials and observational studies, time to and rates of discontinuation, which are overall indices of effectiveness, olanzapine was better than most SGAs and FGAs, except for clozapine.

PMH15
PREDICTORS OF FAVORABLE LONG-TERM OUTCOME IN THE TREATMENT OF SCHIZOPHRENIA
Eli Lilly and Company, Indianapolis, IN, USA

OBJECTIVES: This study aimed to identify schizophrenia patients who experience favorable outcomes over a 3-year period and determine baseline predictors of favorable long-term outcomes. METHODS: A 3-year prospective cohort study of patients with schizophrenia treated at a single community hospital in the United States (US-SCAP; N = 2327). A hierarchical cluster analysis was performed to group patients using baseline clinical, functional, and resource utilization measures. Clinical status was based on symptom severity. Functional level reflected patient-reported productivity and occupational role functioning. Resource utilization of psychiatric hospitalization and emergency services was systematically abstracted from medical records. A patient was classified as having a favorable long term outcome if their outcome values had the closest distance to the defined “best baseline cluster” at each point over the 3-year follow-up, stepwise logistic regression was used to determine baseline predictors. RESULTS: Of 1604 patients with sufficient data to assess 3-year outcomes, only 191 (12%) reported experiencing favorable outcomes. Overall, 5 distinct outcome clusters were identified. Baseline predictors of the most favorable outcomes sustained over the 3-year period included better quality of life, more daily activities, patient-reported clearer thinking, less severe positive symptoms, lower AIMS score, higher level of global functioning, being employed, not having health insurance, being female, and not having help with shopping, leisure, or social activities. CONCLUSIONS: This study identified 5 distinct clusters of patients with schizophrenia based on their baseline clinical, functional, and resource utilization factors. Current findings suggest that clinicians could make early projections of long-term outcome, thus enabling early tailored therapeutic interventions that could enhance patient’s likelihood of achieving more favorable long-term outcomes.

PMH16
THE COMPARATIVE EFFICACY AND SAFETY OF ADJUVANT ANTI精神病ICS IN MAJOR DEPRESSIVE DISORDER PATIENTS THAT FAILED TO RESPOND TO CONVENTIONAL ANTIDEPRESSANTS
Truat M1, Postema R1, Laaz JY2, Howig N1, Drost P1, Pitchk W3
1Pharmacia Europe, Rotterdam, 2, Netherlands, 3Orsucha Pharmaceutical Co., Ltd., Rust-Malansan, 4- France, 5Breitol-Mayers Squala, Braine-l’Alleud, Belgium, 6CHU Liege, Liege, Belgium

OBJECTIVES: Augmentation with atypical antipsychotics is effective in treating patients suffering from major depressive disorder (MDD) and that respond insuffi- ciently to conventional antidepressants. Current large trials comparing these agents are lacking. An indirect comparison was conducted to assess the comparative efficacy and safety of augmentation with atypical antipsychotics in MDD. METHODS: A systematic literature search was conducted on Medline/PubMed (1996-September 2009). Eligible trials enrolled patients diagnosed with unipolar major depressive disorder with resistance to at least one prior antidepressant. Trials had to be double-blind placebo controlled assessing the efficacy and/or safety of augmentation therapy with aripiprazole, quetiapine, or olanzapine during an acute depressive episode. Response
Abstracts

rates, remission rates and discontinuation rates due to adverse events were extracted and compared in a Bayesian meta-analysis. RESULTS: Three aripiprazole, 2 quetiapine and five olanzapine trials were identified together reporting on 2979 patients. Aripiprazole augmentation showed numerically higher efficacy rates compared to quetiapine and olanzapine. Response odds ratios (95% CI) compared to quetiapine and olanzapine were 1.34(0.82-2.06) and 1.52(1.00-2.19) respectively. Remission odds ratios compared to quetiapine and olanzapine were 1.30(0.78-2.07) and 1.26(0.77-1.92) respectively. Aripiprazole augmentation showed numerically lower discontinuation rates compared to quetiapine and olanzapine (OR = 0.99(0.24-2.62) and 0.77(0.23-1.89)). CONCLUSIONS: Amongst augmentation treatments with atypical antipsychotics in MDD, aripiprazole shows a tendency towards higher efficacy rates and lower discontinuation rates due to adverse events compared to quetiapine and olanzapine. More prospective, multicenter, parallel-group, double-blinded, randomized clinical trials are needed to assess the comparative efficacy and safety of adjunctive antipsychotics in MDD.

OUTCOME TRAJECTORIES IN THE LONG-TERM TREATMENT OF SCHIZOPHRENIA

PMH17

Miron D, Gouy Carter G, Faries D, Ascher-Svanum H
Bi Lilly and Company, Indianapolis, IN, USA

OBJECTIVES: This study aimed to determine distinct subgroups of schizophrenia patients based on their illness severity at baseline and characterize those who were most improved and those who worsened the most. METHODS: We used data from a large 3-year prospective, multi-site, observational non-interventional study of individuals treated for schizophrenia in the United States (US-SCAP). A hierarchical cluster analysis was used to group the patients, using baseline clinical, functional, and resource utilization measures. Improvement of outcome was determined based on the distance from the defined “worst baseline cluster” for each post-baseline measure. A trajectory analysis was used to group patients by improvement of outcome over the 3-year study. RESULTS: Almost all participants (99% or 87/88) with 3-year data were found in a single outcomes trajectory, characterized by minimal changes from baseline cluster over the 3-year study period. Approximately one-fourth of individuals moved to a better outcome cluster while about 17% moved to a worse outcome cluster at each year. Only 4% of patients moved from the worst/next to worst cluster to the best/next to best cluster and 16.6% moved from the best/next to best cluster to the worst/next to worst cluster. Most improved patients were more likely than all other patients to have case management, to live in a supervised housing arrangement, and get support with accessing social services and benefit foods/medications. The long-term outcome trajectory for almost all schizophrenia patients in this 3-year naturalistic observational study was stable, devoid of change from the baseline cluster. Only a very small subgroup of patients experienced marked improvements, and they were more likely to be engaged in psychosocial rehabilitation. Although current findings may affirm the value of psychosocial rehabilitation, results highlight the need to improve the relatively stagnant long-term illness trajectory of almost all chronically ill patients with schizophrenia.

TREATMENT PATTERNS IN ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: ANALYSES WITH THE RAMQ DATABASE

PMH18

Jachimczik C1, Rauschmer C2, Mogdison P, Isaacs R3
1University of Montreal, Montreal, QC, Canada, 2Shire Pharmaceuticals, Wayne, PA, USA, 3Shire Pharmaceuticals, Exton, PA, USA

OBJECTIVES: Approved treatments for attention-deficit/hyperactivity disorder (ADHD) include 1) short-acting (SA) and long-acting (LA) stimulants and 2) a LA nonstimulant medication. The objective of this study was to elucidate different drug patterns in treatment to treat ADHD in Canada. METHODS: A retrospective prescription claims analysis of a random sample of 15,838 ADHD patients from the Quebec provincial health plan (RAMQ) database was conducted. Any patient with ≥1 physician claim with an ADHD diagnosis and a claim for a treatment approved for ADHD from July 2004 to June 2009 was considered. RESULTS: The mean age of the study sample was 14.0 years (SD = 8). 72.6% of the sample were males. There were a total of 416,646 ADHD prescriptions during the 5-year study period. As a proportion of total prescriptions, use of SA medications declined from 72.83% in 2004 to 26.38% in 2009, while use of stimulant and nonstimulant LA medications increased from 27.17% to 73.62% over the same period. Approximately half of the patients used both SA and LA medications either concomitantly or subsequently while all patients used LA nonstimulants. Response odds ratios (95% CI) compared to quetiapine and olanzapine were 1.34(0.82-2.06) and 1.52(1.00-2.19) respectively. Aripiprazole augmentation showed numerically lower discontinuation rates compared to quetiapine and olanzapine (OR = 0.99(0.24-2.62) and 0.77(0.23-1.89)). CONCLUSIONS: Amongst augmentation treatments with atypical antipsychotics in MDD, aripiprazole shows a tendency towards higher efficacy rates and lower discontinuation rates due to adverse events compared to quetiapine and olanzapine. More prospective, multicenter, parallel-group, double-blinded, randomized clinical trials are needed to assess the comparative efficacy and safety of adjunctive antipsychotics in MDD.

Comparative Analysis of the Efficacy and Safety of Escitalopram with Sertraline and Venlafaxine in the Treatment of Major Depressive Disorder (MDD)

PMH19

Waliczak M, Maley S, Rzewuska M
Arcania Institute, Cracow, Poland

OBJECTIVES: The purpose of the review was to evaluate the efficacy and safety of escitalopram compared with sertraline and venlafaxine in treatment of major depressive disorder (MDD). METHODS: The analysis was performed in accordance with the rules of systematic review, based on Cochrane Collaboration guidelines and recommendations of Health Technology Assessment Agency in Poland (AOTM). RESULTS: In this report there were two subanalyses conducted, evaluating the efficacy and safety of escitalopram in comparison with sertraline and venlafaxine and compared in a Bayesian meta-analysis. Three aripiprazole, 2 quetiapine and five olanzapine trials were identified together reporting on 2979 patients. Aripiprazole augmentation showed numerically higher efficacy rates compared to quetiapine and olanzapine. Response odds ratios (95% CI) compared to quetiapine and olanzapine were 1.34(0.82-2.06) and 1.52(1.00-2.19) respectively. Remission odds ratios compared to quetiapine and olanzapine were 1.30(0.78-2.07) and 1.26(0.77-1.92) respectively. Aripiprazole augmentation showed numerically lower discontinuation rates compared to quetiapine and olanzapine (OR = 0.99(0.24-2.62) and 0.77(0.23-1.89)). CONCLUSIONS: Amongst augmentation treatments with atypical antipsychotics in MDD, aripiprazole shows a tendency towards higher efficacy rates and lower discontinuation rates due to adverse events compared to quetiapine and olanzapine. More prospective, multicenter, parallel-group, double-blinded, randomized clinical trials are needed to assess the comparative efficacy and safety of adjunctive antipsychotics in MDD.

Use of a Linked Hospital Admissions and Health Care Claims Database in Pharmaceutical Outcomes Research: Results of a Feasibility Examining Treatment of Schizophrenia with Atypical Antipsychotics

PMH20

Berg A1, Sanders K1, Ahir J1, Mythakal P1, Qiu A1, Oster G1
Policy Analysis Inc., Brookline, MA, USA, 1Pfizer, Inc., New York, NY, USA

OBJECTIVES: Results of a exploratory study using linked health care claims databases, periods during which patients are hospitalized have constituted “black holes”, as these databases do not contain any information on pharmacotherapy received in hospital. While admission-level databases provide such information, they lack information on pharmacotherapy received outside of hospital. In the current study, we explored their potential value to outcomes research, focusing on second-generation antipsychotic (SGA) treatment before, during, and after hospitalization for schizophrenia. METHODS: Using a linked inpatient/outpatient database, we identified all adults with 21 admissions for schizophrenia between January 1, 2001 and September 30, 2008. Focusing on each patient’s first admission, we compiled all health care claims during the 6-month periods preceding and following hospitalization. As our interest was in the use of SGAs, our scope was limited to patients with evidence of receipt of oral risperidone, aripiprazole, or quetiapine (“study agents”) immediately preceding hospital discharge. We then examined receipt of these agents during the 6-month periods preceding hospitalization and following hospital discharge based on outpatient pharmacy claims in hospital was examined using admission-level data. Adherence with study agents following hospital discharge was assessed using proportion of days covered (PDC); patients were deemed nonadherent if PDC fell below 80%. RESULTS: A total of 43 patients were identified who met all study entry criteria. Twenty-four patients (56%) had evidence of receipt of a study agent in the period preceding hospitalization. While all patients had evidence of receipt of study agents following hospital discharge, only 12% were adherent at 6 months. CONCLUSIONS: Linked inpatient/outpatient databases are a promising avenue for future pharmaceutical outcomes research, as they may greatly expand understanding of the complete chronology of pharmacotherapy–associated outcomes–for many disease conditions.

Prevalence and Predictors of Anticholinergic Medication Use in Elderly Nursing Home Residents with Dementia

PMH21

Chatterjee S, Palli SR, Mehta S, Aparasu RR, Sherrer JT
University of Houston, Houston, TX, USA

OBJECTIVES: To examine prevalence and predictors of anticholinergic medication use in elderly nursing home residents with dementia. METHODS: The study evaluated anticholinergic medication use in elderly (> 65 years) nursing home residents using the 2004 National Nursing Home Survey (NNHS). Anticholinergic Drug Scale was used to classify medications as Level 1, Level 2 or Level 3 in terms of their increasing anticholinergic activity. Descriptive weighted analysis was used to determine the prevalence of anticholinergic medication use in elderly dementia patients. Multinomial logistic regression within the conceptual framework of Andersen Behavioral Model (ABM) was used to examine the predictors associated with each level of increasing anticholinergic medication use as well as concurrent use of anticholinergic medications belonging to two or more levels. RESULTS: According to the NNHS, 0.51 million (95% CI: 0.49–0.53) or 73.62% (72.23–75.00) of the elderly patients with dementia used anticho-