Risperidone Injection

**OBJECTIVE:** To assess the cost-effectiveness of long-acting risperidone, oral risperidone (RIS), olanzapine (OLA) and haloperidol decanoate (HAL-DEC) in patients with schizophrenia over a 1-year time period. **METHODS:** Published medical literature, a consumer health database, and a clinical expert panel were utilized to populate a decision tree model. The model captured rates of compliance, relapse, frequency of relapse, duration of relapse, adverse events, resource utilization and unit cost of health care resources. Outcomes are expressed in terms of percentage, number and duration of relapses per patient per year and total cost per patient per treatment arm. **RESULTS:** The proportion of patients predicted by the model to experience a relapse requiring hospitalization in 1 year were 66% HAL-DEC, 41% RIS and OLA, 26% long-acting risperidone, while the proportion of patients with an exacerbation not requiring hospitalization were 60% HAL-DEC, 37% RIS and OLA, and 24% long-acting risperidone. The mean number of days of relapse requiring hospitalization per patient per year were predicted to be 28 HAL-DEC, 18 RIS and OLA, 11 long-acting risperidone, while the mean number of days of exacerbation not requiring hospitalization were 8 HAL-DEC, 5 RIS and OLA, and 3 long-acting risperidone. This translates into cost savings with long-acting risperidone compared to oral risperidone, olanzapine, and haloperidol decanoate of $397, $1742, and $8328, respectively. **CONCLUSIONS:** Predictive modeling suggests that long-acting risperidone can potentially lead to lower rates and fewer days of symptom exacerbation and hospitalization compared to alternative treatments. These lower rates translate into cost savings with the use of long-acting risperidone.

---

**CONVENTIONAL ANTIPSYCHOTICS CAN BE COST EFFECTIVE FOR BROADLY DEFINED TREATMENT RESISTANT OR INTOLERANT SCHIZOPHRENIA**

**Davies L1, Lewis S2, Hay Hurst K**

1 University of Manchester, Manchester, United Kingdom

**OBJECTIVES:** To estimate the cost acceptability of conventional antipsychotic (CA) compared to atypical antipsychotic (AA) treatment for people with broadly defined treatment-resistant or treatment intolerant schizophrenia in the UK (poor clinical response or side-effects to one or more antipsychotics, but not considered for cocaine). **METHODS:** A total of 227 adults with broadly defined treatment resistant or intolerant schizophrenia were enrolled into a pragmatic controlled trial of CA and AA and randomised to a class of drug (CA or AA). The treating physician and patient determined the choice of drug within the class. A societal perspective was used; scheduled follow up was 12 months. The primary outcome was quality adjusted life years (QALY’s measured by the Aerosol and population utility tariffs). Direct costs were measured as resource use multiplied by published national unit costs. Censored data were predicted (Cox regression) and missing observations imputed. Incremental cost utility ratios (ICER), net benefit statistic and cost acceptability curves for the intent to treat cohort were calculated. Methods related assumptions (link between costs and QALYS (stepwise regression), association between Aerosol and clinical measures (Spearman’s Rho), imputation method, source of unit costs) were tested. **RESULTS:** Utility values were associated with clinical measures (p < 0.00). QALY’s predicted costs (a = –0.21; p < 0.00). Primary and sensitivity analyses indicated a trend towards QALY gain (0.04–0.08) and cost savings (£1100–£1200) for CA, giving a net benefit statistic of £5500 (2.5th–97.5th percentile: —£2650–£13,000). Complete case analysis indicated a cost of £3300/QALY. The probability that CA was cost-effective ranged from 64% at a cost/QALY threshold of £0, to 78% if they are prepared to pay up to £20,000/QALY gained.

**CONCLUSIONS:** This study shows that, in the treatment of schizophrenia and bipolar disorder, higher doses of quetiapine may lower levels of mental health resource use, suggesting enhanced efficacy.

---

**UTILIZATION ANALYSIS OF HEALTH CARE RESOURCES FOR PATIENTS TREATED WITH ATYPICAL ANTIPSYCHOTICS**

**Liu GG1, Sun SX1, Christensen DB2, Zhao Z2**

1 University of North Carolina at Chapel Hill, Chapel Hill, NC, USA; 2Eli Lilly and Company, Indianapolis, IN, USA

**OBJECTIVE:** To compare the utilization of health care resources for patients with schizophrenia receiving olanzapine versus risperidone treatment. **METHOD:** Schizophrenia patients were drawn from North Carolina Medicaid Claims database. Treatment groups were determined based on the first use of olanzapine or risperidone. The use of health care resources was estimated for schizophrenia-related, mental health-related, and all-cause services using the negative binomial regression models. The models were controlled for patient demographic and clinical characteristics, and resource utilization in the baseline period. **RESULTS:** A total of 498 patients (286 in olanzapine cohort and 212 in risperidone cohort) were identified with available data for three-month prior and 18-month after antipsychotic treatment. During the 18-month post-treatment period, patients in olanzapine cohort had significantly fewer hospital admissions (–0.36, p = 0.047) and spent significantly fewer days in the hospital (–0.92, p = 0.018) than risperidone patients for schizophrenia-related conditions. There were no statistically significant differences between the two cohorts in hospital admissions for mental health-related and all-cause related conditions. The two groups did not differ significantly in terms of emergency room and nursing home visits. In addition, patient demographic and clinical characteristics, and resource utilization in prior treatment period were also found to influence the use of the medical services. **CONCLUSIONS:** Patients treated with olanzapine are found to have both fewer hospital admissions and fewer hospital days for schizophrenia-related conditions as compared to those treated with risperidone, indicating that olanzapine treat-


**CONCLUSIONS:** Sensitivity analyses.

Hungary, Israel, Saudi Arabia, Slovenia, South Africa and United Kingdom dominated both risperidone and haloperidol in Croatia, risperidone in Czech Republic, Lithuania and Slovakia; and respectively. These results indicate that olanzapine dominated compared to haloperidol these figures were 8%, 37% and 13% respectively. These doses used were those specified by the World Health Organisation. Local prices and costs were applied to resource utilisation from trials to estimate the overall direct costs associated with each therapy. Indirect costs were estimated using average wages and labour data from national statistics offices.

**RESULTS:** This analysis, though retrospective, found Olanzapine to be cost-effective or cost saving against haloperidol and risperidone in all countries considered. The incremental total cost of olanzapine over risperidone ranged from US$1232 (Israel) to US$470 (Algeria). Against haloperidol, the incremental total cost ranged from US$2353 (Israel) to US$996 (Romania). Cost-savings were largely driven by reduced hospitalisations. In terms of efficacy, meta-analyses showed that compared with risperidone, 10% more olanzapine patients achieved ≥40% PANSS improvement; 15% fewer required anticholinergic medication and 12% fewer patients dropped out. Compared to haloperidol these figures were 8%, 37% and 13% respectively. These results indicate that olanzapine dominated risperidone in Czech Republic, Lithuania and Slovakia; and dominated both risperidone and haloperidol in Croatia, Hungary, Israel, Saudi Arabia, Slovenia, South Africa and United Arab Emirates. Olanzapine continued to be cost-effective in sensitivity analyses. CONCLUSIONS: Olanzapine displays greater efficacy and is cost-effective or cost saving compared with risperidone and haloperidol in the sixteen countries where analyses were undertaken.

**OBJECTIVES:** To assess the cost-effectiveness of olanzapine compared with other antipsychotics in the treatment of schizophrenia in sixteen countries (Algeria, Croatia, Czech Republic, Hungary, Israel, Latvia, Lithuania, Poland, Romania, Russia, Saudi Arabia, Slovakia, Slovenia, South Africa, Turkey, and United Arab Emirates). METHODS: Resource use data from numerous double-blind randomised controlled trials of olanzapine versus either risperidone or haloperidol were used to determine treatment costs. Resources considered were study drug, concomitant medication and hospitalisations. Data relating to lost production from unemployment and suicide were sourced from literature. The trials also reported relative safety and efficacy. The doses used were those specified by the World Health Organisation. Local prices and costs were applied to resource utilisation from trials to estimate the overall direct costs associated with each therapy. Indirect costs were estimated using average wages and labour data from national statistics offices.

**RESULTS:** This analysis, though retrospective, found Olanzapine to be cost-effective or cost saving against haloperidol and risperidone in all countries considered. The incremental total cost of olanzapine over risperidone ranged from US$1232 (Israel) to US$470 (Algeria). Against haloperidol, the incremental total cost ranged from US$2353 (Israel) to US$996 (Romania). Cost-savings were largely driven by reduced hospitalisations. In terms of efficacy, meta-analyses showed that compared with risperidone, 10% more olanzapine patients achieved ≥40% PANSS improvement; 15% fewer required anticholinergic medication and 12% fewer patients dropped out. Compared to haloperidol these figures were 8%, 37% and 13% respectively. These results indicate that olanzapine dominated risperidone in Czech Republic, Lithuania and Slovakia; and dominated both risperidone and haloperidol in Croatia, Hungary, Israel, Saudi Arabia, Slovenia, South Africa and United Arab Emirates. Olanzapine continued to be cost-effective in sensitivity analyses. CONCLUSIONS: Olanzapine displays greater efficacy and is cost-effective or cost saving compared with risperidone and haloperidol in the sixteen countries where analyses were undertaken.

**OUT-OF-POCKET DRUG EXPENDITURES AND PATTERNS OF DEPRESSION IN THE ELDERLY: A 5-YEAR POPULATION-BASED STUDY**

Dalal M, Pickard AS, Lin SJ

University of Illinois at Chicago, Chicago, IL, USA

**OBJECTIVE:** To determine if total out-of-pocket prescription drug (OOPDD) expenditures by the community dwelling elderly differ according to longitudinal patterns depression. METHODS: Secondary data analyses were performed using the population-based study of Assets and Health Dynamics (AHEAD) of the Oldest Old (adults ≥ 65 years). Depression was considered present if 4 or more depressive symptoms were reported on the modified Center for Epidemiological Studies-Depression Scale (CES-D). Three survey waves in 1995, 1998 and 2000 allowed depression to be characterized as persistent, emergent, remittent, and recurrent. ANOVA and regression techniques were used to estimate association between mean total monthly OOPPPD expenditures in 2000 based on depression pattern. RESULTS: Of the 7027 elderly residents interviewed in 1995, 19% were lost to follow up at 2000. More than 50% of respondents never experienced significant depressive symptoms. Mean (SD) OOPPPD expenditures for each pattern of depression were: $221(1203) for recurrent (n = 63); $106(598) for emergent (n = 324); $86(227) for remittent (n = 210); $78(138) for persistent (n = 179); and $70(168) for never depressed (n = 3290). Only those with recurrent depression had significantly higher OOPPPD expenditures compared to those without depression (ANOVA, p < 0.05). After adjusting for age, gender, and comorbidity, recurrent and emergent patterns of depression were associated with significantly higher mean monthly OOPPPD expenditures compared to those without depression, while persistent and remittent depression were not. CONCLUSIONS: The community dwelling elderly with fluctuating patterns of depression appear to pay more in monthly OOPPPD expenditures than the elderly with stable patterns, including chronic depression. Upon testing of the robustness of the results using non-parametric and longitudinal random-effects models, further investigation into the burden of illness based on longitudinal patterns of depression is recommended.