An Economic Evaluation of Brexpiprazole Treatment in Patients with Schizophrenia in the United States

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**Background**
- Schizophrenia is a chronic, debilitating mental disorder impacting over 21 million people worldwide and 1.1% of US adults.
- While antipsychotic medications are used for the treatment of patients with schizophrenia, adherence to oral treatments is often poor. Major causes of antipsychotic treatment discontinuation are intolerable adverse events associated with common treatment uses and lack of efficacy due to heterogeneous response, therefore additional treatment options are needed.
- Brexpiprazole, is a recently launched atypical antipsychotic indicated for adjunctive therapy to antipsychotic agents, for the treatment of major depressive disorder and treatment of schizophrenia in adults.
- The efficacy of brexpiprazole in adults with schizophrenia was demonstrated in a 6-week, randomized, double-blind, placebo-controlled, fixed-dose clinical trials in patients with schizophrenia.
- Brexpiprazole has demonstrated low incidence of sedation (e.g., somnolence, somnolence, and hyperactivity) or activating adverse events (AEs) (e.g., akathisia, insomnia, anxiety, and restlessness), low rate of long-term treatment, and no significant change in body weight gains.

**Objective**
- This analysis aimed to examine the cost-effectiveness of brexpiprazole as monotherapy treatment of schizophrenia compared with quetiapine XR and lurasidone from a US payer perspective.

**Methods**

**Model Overview**
- Type: Deterministic decision analysis model in Microsoft Excel 2011
- Population: Schizophrenia patients ages 18-65 switching treatment (2nd line) and prevalent patients, respectively.
- Trial: US Managed Care Payor
- Currency: US Dollars
- Time horizon: 6 months
- Clinical Inputs: Adverse event (AE) rates, change in Positive and Negative Syndrome Scale (PANSS) score, change in Clinical Global Impressions-Severity (CGI-S) score, worst-case scenario
- Cost Inputs: Product acquisition, adverse event treatment, patient input, and indirect costs.
- Outcome Measures: Costs per patient, change in PANSS score, change in CGI-S score, SGA-GU unit change, SPSA-GU unit change.

Patients entered the model after treatment with a previous antipsychotic, initiated treatment, and were simulated for 6 weeks reflecting clinical trial durations. Figure 1. While all model patients could discontinue therapy due to relapse, adverse events, or other causes. Changes in PANSS and CGI-S scores for patients on treatment were incorporated after 6 weeks of treatment.

**Model Estimates (Inputs and Outcomes)**
- Clinical inputs were derived from 6-week clinical trials cited in products’ information containing comparable data and clinical outcomes, including brexpiprazole: two Phase 3 trials,2 lurasidone: three Phase 3 clinical trials,3-5 quetiapine XR: Phase 2 trial,6-7 lurasidone: one Phase 3 trial,8 and one additional open-label study.9
- Clinical parameters included mean change in PANSS and CGI-S scores, and treatment discontinuation (Table 1). An adjusted relative-case comparison using placebo as a common comparator used to model input utility efficacy values. All AEs rates estimated on unadjusted numbers in clinical trials (Table 2), and costs were based on published literature and expert scores.10-11

**Results**

**Brexpiprazole 2mg: Treatment discontinuation rate 1.19% vs. 1.6% lurasidone XR 600mg, 72% change in CGI-S score compared with baseline, 64% improvement in PANSS total score over 12 weeks.**

**Conclusion**
- This analysis suggests that treating patients with brexpiprazole 2mg or 4mg would reduce costs compared to treatment with lurasidone or quetiapine XR.
- The model also found that use of brexpiprazole could improve performance in commonly used clinical rating scales such as the PANSS and CGI-S.
- While brexpiprazole was effective in schizophrenia research, CGI-S may be more meaningful for non-research clinicians.
- Results should be considered in light of limitations, including a limited 6-week time horizon of head-to-head randomized clinical trials and input trial parameters.
- Model results can assist in healthcare decision-making when evaluating the cost-effectiveness of treatments for schizophrenia.

**Disclosures**