Factors Associated with Adherence to Phosphodiesterase Type 5 Inhibitors for the Treatment of Pulmonary Arterial Hypertension

A. Waxman, MD, PhD; S. Chen, PhD; L. Boulanger, MA, MBA; J. Watson, PharmD; G. Golden, MD, PhD

1Brigham and Women’s Hospital, Harvard Medical School, Boston, Mass., 2United BioSource Corporation, Lexington, Mass., 3United Therapeutics, Research Triangle Park, N.C.

PURPOSE: To assess factors associated with adherence to phosphodiesterase type 5 inhibitors (PDE5Is) in the management of pulmonary arterial hypertension (PAH).

BACKGROUND: Research has stressed the importance and challenge of adherence to medication for chronic diseases in the real-world setting. Currently, limited data are available regarding adherence for the management of PAH in clinical practice. Published literature suggests that patients with chronic diseases are more adherent to once-daily versus twice-daily or thrice-daily treatment regimens. We evaluated this in PAH by examining if patients treated with Adcirca (indicated to be taken once-daily) are more likely to be adherent than patients treated with Revatio (indicated to be taken 3-times daily).

METHODS: This study analyzed pharmacy benefit claims of naive Adcirca and Revatio users between January 1, 2008 and December 31, 2010. Patients were considered adherent if their proportion of days covered (PDC) was 80% over a 6-month period. Logistic regressions were estimated to assess the factors associated with adherence. Analyses were stratified by use of a specialty pharmacy or retail pharmacy. A sensitivity analysis was performed by excluding individuals dispensed a 90-day supply of medication.

FINDINGS: Of the total of 2143 patients included for analysis, 46.8% were adherent. Adherence was higher among 930 specialty pharmacy users (65.6%) versus 1213 retail pharmacy users (32.3%, p<0.001). Adherence was higher among Adcirca users (60.7%; approved dose 40 mg once-daily) than Revatio users (44.3%, p<0.001; approved dose 20 mg thrice-daily). Among retail pharmacy users, adherence was higher in patients using Adcirca (OR=2.59; 95% CI=1.60–4.22) and patients with an index prescription given by pulmonologists (OR=1.70; 95% CI=1.15–2.50), while lower in patients with higher copayment ($51–$250: OR=0.61, 95% CI=0.42–0.90; $251+: OR=0.57, 95% CI=0.39–0.83). Among specialty pharmacy users, only high copayment ($251+: OR=0.56, 95% CI=0.35–0.90) was found to be a significant factor for non-adherence. After excluding individuals with 90-day supply, adherence rate was 29.6% in retail pharmacy and 57.9% in specialty pharmacy (p<0.001), and regression results were similar.

STUDY LIMITATIONS: Diagnosis of PAH could not be confirmed without access to medical claims. Pharmacy refill records might not reflect actual consumption. Adherence evaluated for 6 months may not be extrapolated to longer periods.

CONCLUSION: Adherence to PDE5Is for PAH is sub-optimal. Our findings suggest that adherence to PDE5Is in patients with PAH is associated with the use of specialty pharmacy, simpler dosing frequency, a lower financial barrier, and a prescription given by a pulmonologist.

This study was sponsored by United Therapeutics Corporation