

Outcomes and costs associated with oral treprostinil and selexipag one-year into treatment: a U.S. claims database analysis in patients with pulmonary arterial hypertension

Peter Classi, MSc, MBA
United Therapeutics Corporation

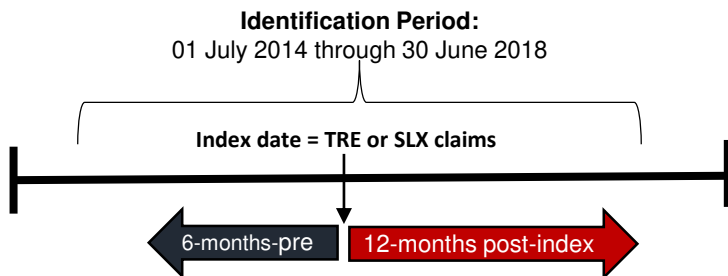
Co-Authors: Morland K, Wu B, DeRuiter A, Lee H, Stafkey-Mailey D, Dean B

Disclosure: Study was funded by United Therapeutics Corporation

Study Purpose and Methods

- Previous comparisons of oral treprostinil (TRE) and selexipag (SLX) using real-world data have used short duration follow-up periods¹ or have contained only hospitalization outcomes².
- This analysis aims to characterize adherence, persistence and costs for pulmonary arterial hypertension (PAH) patients being treated with TRE or SLX 1-year into treatment using U.S. claims data from 2014-2019.

Data source: IBM MarketScan CCAE and Medicare Supplemental



Inclusion Criteria

- Patient claim for TRE or SLX during identification period
- Aged ≥ 18 years old at index
- Continuous health plan enrollment 6-months pre-index
- Continuous health plan enrollment 12-months post-index
- Patients with ICD9 or ICD10 code for pulmonary hypertension

Exclusion Criteria

- Initiating TRE or SLX on the same day
- History of TRE or SLX use
- No pulmonary hypertension ICD9 or ICD 10 code in pre-index

1. Dean BB et al. *Drugs Real World Outcomes*. 2020.

2. McConnell JW et al. *Pulmonary Circulation*. 2020.

Results: Patient Characteristics and PAH Treatments at Baseline

	TRE N=120		SLX N=155		P-value
Age in years, Mean (SD)	57.0	(16.1)	57.2	(13.5)	0.96
Males, n (%)	36	30.0%	35	22.6%	0.16
Plan Type, n (%)					0.03
FFS	14	11.7%	17	11.0%	
EPO/PPO	74	61.7%	72	46.5%	
HMO	6	5.0%	22	14.2%	
POS	6	5.0%	18	11.6%	
CDHP/HDHP	17	14.2%	22	14.2%	
Unknown	3	2.5%	4	2.6%	
Payer Type, n (%)					0.48
Commercial	82	68.3%	112	72.3%	
Medicare Supplemental	38	31.7%	43	27.7%	
Index Year					
2014	22	18.3%	0	0.0%	
2015	47	39.2%	0	0.0%	
2016	26	21.7%	87	56.1%	
2017	15	12.5%	49	31.6%	
2018	10	8.3%	19	12.3%	
CCI, Mean (SD)	3.5	(2.6)	3.1	(2.0)	0.32
Right Heart Catheterization, n (%)	58	48.3%	65	41.9%	0.29
Echocardiography, n (%)	90	75.0%	111	71.6%	0.53

	TRE N=120		SLX N=155		P-value
Baseline PAH Treatments, n (%)					
ERA	91	75.8%	106	68.4%	0.17
PDE5i	80	66.7%	117	75.5%	0.11
sGC stimulator	16	13.3%	21	13.6%	0.96
ERA + PDE5i*	55	45.8%	76	49.0%	0.60
ERA + sGC stimulator*	10	8.3%	14	9.0%	0.84
Remodulin	11	9.2%	1	0.7%	0.001
Tyvaso	9	7.5%	19	12.3%	0.20
Epoprostenol	3	2.5%	3	1.9%	1.000
Iloprost	4	3.3%	5	3.2%	1.000
Any Parenteral Prostacyclin	14	11.7%	4	2.6%	0.003

CDHP: consumer driven health plan; EPO: exclusive provider organization; FFS: fee for service; HDHP: high deductible health plan; HMO: health maintenance organization; NR: not reported; POS: point of service; PPO: preferred provider organization; SD: standard deviation

*For determining combination therapy, an overlap of 30 days supply was required in baseline period; ERA: endothelin receptor antagonist; PDE5i: phosphodiesterase type-5 inhibitor; sGC: soluble guanylate cyclase

Results: Adherence, Persistence and Costs for 12-Month Follow-up Period

	TRE N=120		SLX N=155		P-value
Adherence (MPR)					
mean (SD)	0.89	0.19	0.87	0.19	0.02
median (IQR)	1.00	0.89-1.00	0.90	0.85-0.98	
MPR ≥ 80% (n[%])	100	83.3%	125	80.6%	0.57
Persistence					
still on therapy at 12-months, n (%)	64	53.3%	91	58.7%	0.37
# of days to treatment discontinuation, mean (SD)	107	82	89	71	0.10
switches to parenteral prostacyclin, n (%)	8	6.7%	8	5.2%	0.80
PAH-Related Costs					
total healthcare costs, mean (SD)	\$247,771	\$236,755	\$314,429	\$196,341	p<0.0001
total healthcare costs, median (IQR)	\$202,207	\$105,978-\$310,124	\$319,366	\$223,808-\$388,929	
total medical costs, mean (SD)	\$8,478	\$14,629	\$18,651	\$104,004	0.386
total medical costs, median (IQR)	\$2,984	\$1,074-\$10,287	\$3,221	\$1,260-\$11,006	
total pharmacy costs, mean (SD)	\$239,293	\$233,842	\$295,777	\$168,210	p<0.0001
total pharmacy costs, median (IQR)	\$197,854	\$100,879-\$308,080	\$306,893	\$207,534-\$378,877	
total pharmacy costs related to study drug among persistent users at 12-months, mean (SD)	\$175,968	\$252,766	\$250,139	\$106,941	p<0.0001
total pharmacy costs related to study drug among persistent users at 12-months, median (IQR)	\$107,511	\$45,647-\$186,622	\$232,071	\$211,039-\$256,402	

MPR: medication possession ratio; MPR≥80% = adherent
SD: standard deviation; IQR: interquartile range

Conclusions and Clinical Implications

- Real-world U.S. health insurance claims data shows relatively similar utilization patterns of oral treprostinil and selexipag in patients with PAH including a similar proportion of patients who are adherent and persistent on therapy.
- However, there is a notable difference in total healthcare costs associated with the two medications, largely driven by higher pharmacy costs directly attributable to selexipag use.
- Among the patients persistent on therapy at 1-year, median (IQR) annual pharmacy costs were \$232,071 (\$211,039-\$256,402) for SLX compared with \$107,511 (\$45,647-\$186,622) for TRE representing 116% higher median annual pharmacy costs for SLX.
- Further studies need to be conducted to explore whether oral treprostinil is a more cost-effective treatment option relative to selexipag for patients with PAH.