

## THE IMPACT OF INCREASED MIRABEGRON USAGE AND DECREASED SWITCHING ON HEALTHCARE COSTS AND RESOURCE UTILIZATION IN PATIENTS WITH OVERACTIVE BLADDER IN THE UNITED STATES: A RETROSPECTIVE DATABASE ANALYSIS

### Hypothesis / aims of study

Persistence with medications has been shown to reduce costs and improve patient outcomes. Overactive bladder (OAB) patients are typically treated with oral medications, including antimuscarinics (AMs) and mirabegron before progressing to more invasive treatments such as intradetrusor onabotulinumtoxinA (onabotA), sacral neuromodulation (SNM), and peripheral tibial nerve stimulation (PTNS). The objective of this study was to compare healthcare costs in OAB patients who persisted on mirabegron versus OAB patients who switched from mirabegron to other OAB treatments.

### Study design, materials and methods

A retrospective study comparing patients who persisted on mirabegron with those who switched to either an AM or surgical treatment was conducted using OptumHealth administrative claims data from April 2012 to September 2015. The study included subjects  $\geq 18$  years with  $\geq 1$  claim for an OAB diagnosis and  $\geq 1$  claim for mirabegron. Subjects with pregnancy, benign prostatic hyperplasia, stress incontinence, or urinary tract infection were excluded. Persistence was defined as maintaining a continuous supply of mirabegron for more than 180 days with no more than a 30-day gap. Index dates for switchers were the date of switch and were randomly assigned for persisters to account for temporal bias. Healthcare costs and healthcare resource utilization (HRU) were measured in the 6 months pre- and 12 months post-index date. The study compared all-cause and OAB-related healthcare costs and HRU for persisters with switchers using generalized linear models and negative binomial regressions, with propensity score weighting to account for differences at baseline.

### Results

A total of 623 patients were included in this study. After propensity score weighting, persisters (N=396) and switchers (N=227) were similar in baseline characteristics; mean age (63.9 vs. 64.9; standard difference [SD]=0.07), percent male (23% vs. 25%; SD=0.05), Elixhauser score (2.2 vs. 2.1; SD=0.03), baseline medical visits (14.1 vs. 14.4, SD=0.03), and baseline healthcare costs (\$11,554 vs. \$12,346; SD=0.05). Among the switchers, 71% switched to an AM, and 29% switched to later-line treatments. At 12 months post-index, OAB-related medical visits were higher for the switchers (4.1 vs. 2.5;  $p=0.015$ ) resulting in higher OAB-related total costs (\$3,344 vs. \$2,418;  $p=0.015$ ) and OAB-related medical costs (\$2,293 vs. \$669;  $p<0.001$ ). OAB-related prescription costs (\$1,749 vs. \$1,051;  $p<0.001$ ) were higher among persisters. No significant differences were seen among all-cause total, medical, and prescription costs (Table 1).

### Interpretation of results

Fewer medical visits were observed in patients who persist with mirabegron for  $>180$  days resulting in lower overall OAB healthcare costs compared to those who switch to an AM or later-line treatment options such as onabotA injection, PTNS, and SNM.

### Concluding message

Among patients who were on mirabegron, those that switched had higher OAB-related medical visits, total costs, and medical costs compared to those who remained on mirabegron. These results indicate that better persistence with mirabegron can result in lower cost and HRU.

**Table 1 Comparison of healthcare costs and resource utilization between patients who persisted with mirabegron and patients who switched to other treatments**

Endpoint	Persisters (N = 396)		Switchers (N = 227)		Difference	p-value
	Estimate	Std. Err.	Estimate	Std. Err.		
<b>Healthcare costs</b>						
Total cost	\$26,078	\$2,039	\$26,596	\$3,250	(\$518)	0.892
Total medical cost	\$17,261	\$1,863	\$19,442	\$2,650	(\$2,181)	0.494
Total prescription cost	\$8,824	\$592	\$7,154	\$1,064	\$1,670	0.198
OAB-related cost	\$2,418	\$147	\$3,344	\$398	(\$926)	0.015
OAB-related medical cost	\$669	\$140	\$2,293	\$414	(\$1,624)	<0.001
OAB-related prescription cost	\$1,749	\$48	\$1,051	\$85	\$698	<0.001
OnabotA cost	\$78	\$25	\$429	\$100	(\$350)	<0.001
PTNS cost	\$50	\$18	\$107	\$46	(\$56)	0.042
SNM cost	\$150	\$70	\$991	\$318	(\$841)	<0.001
Mirabegron Rx cost	\$1,646	\$48	\$187	\$38	\$1,460	<0.001
Antimuscarinic Rx cost	\$103	\$18	\$864	\$92	(\$761)	<0.001
Outpatient cost	\$10,554	\$924	\$14,893	\$1,788	(\$4,339)	0.020
Inpatient cost	\$5,132	\$1,254	\$3,796	\$1,046	\$1,336	0.532
ER cost	\$133	\$33	\$71	\$28	\$62	0.249
<b>Healthcare resource utilization</b>						
Total medical visits and prescription claims	85.0	3.0	80.9	4.2	4.2	0.419
Total medical visits	29.1	1.3	29.5	2.0	(0.4)	0.859
Total prescription claims	56.0	2.1	51.3	3.6	4.7	0.272
OAB-related visits	8.1	0.5	8.8	0.5	(0.7)	0.305
OAB-related medical visits	2.5	0.4	4.1	0.5	(1.6)	0.015
OAB-related prescription visits	5.7	0.2	4.7	0.5	1.0	0.072
OnabotA visits	0.1	0.0	0.4	0.1	(0.3)	<0.001
PTNS visits	0.2	0.1	1.0	0.3	(0.7)	0.004
SNM visits	0.1	0.0	0.3	0.1	(0.2)	0.008
Mirabegron claims	5.2	0.2	0.7	0.1	4.5	<0.001
Mirabegron days supply	241.2	6.9	26.1	5.2	215.1	<0.001
Antimuscarinic claims	0.5	0.1	4.0	0.5	(3.5)	<0.001
Antimuscarinic days supply	20.4	3.5	164.0	14.7	(143.6)	<0.001
Outpatient visits	23.3	1.0	24.8	1.7	(1.5)	0.437
Inpatient visits	7.1	1.2	6.6	2.2	0.5	0.847

**Disclosures**

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