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Antimuscarinic use in Men Treated with Bladder Outlet Obstruction Medication Therapy

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Abstract

OBJECTIVE—To assess changes over time in the use of antimuscarinics (AM) among visits in adult men treated with bladder outlet obstruction (BOO) medication therapy (i.e., alpha blocker, 5-alpha reductase inhibitors).

METHODS—We used the National Ambulatory Medicare Care Survey (NAMCS) database (2006 through 2014) to identify men aged 40 or older who initiated or continued on BOO medication therapy. Among these visits, we assessed the percentage of AM and evaluated trends of AM use across between 2006 and 2014 using multivariable logistic regression.

RESULTS—Overall, there were 7,561 patient visits in men who were treated with BOO medication therapy between 2006 and 2014 which equates to approximately 158 million visits in the United States after incorporating NAMCS weights. Overall, AM was used in 3.7% of visits among those who were treated with BOO medication therapy. In the multivariable analysis, the use of antimuscarinics in 2006 relative to subsequent years through 2014 ($p=0.8104$).

CONCLUSIONS—Despite a previous study that showed an increasing trend in antimuscarinic use among patients coded for lower urinary tract symptoms or benign prostatic hyperplasia between 1993 and 2010, several recent randomized controlled trials, and a recommendation in a clinical practice guideline in 2010, we found no increasing trend in antimuscarinic use among visits in men who were treated with BOO medication therapy in 2006 compared to subsequent years. Overall, the use of antimuscarinics was low (3.7%), suggesting a potential undertreatment of antimuscarinics and an area for improved prescribing.

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Conflict of Interest:

The authors disclose no financial conflicts of interests

Keywords

Bladder Outlet Obstruction; Lower Urinary Tract Symptoms; Antimuscarinics; Overactive Bladder; Pharmacoepidemiology

Introduction

Approximately 50% of men with lower urinary tract symptoms (LUTS) secondary to bladder outlet obstruction (BOO) have urinary storage symptoms such as urgency, frequency, nocturia, and urinary incontinence.^{1,2} Based on recent randomized controlled trials, the American Urological Association (AUA) recommends the use of an antimuscarinic (AM) as an option, in addition to an alpha blocker (AB) in men with BOO and urinary storage symptoms without baseline excessive post-void urine residuals.^{3–9} These trials reported improvements in overactive bladder (OAB) symptoms in patients taking an AM in combination with an alpha-blocker compared to patients taking AB monotherapy. Moreover, AM and AB combination therapy did not show increased post-void residual volumes or an increased risk for urinary retention, as previously hypothesized, compared to AB alone.¹⁰ However, these randomized controlled trials were likely not representative of men with BOO and urinary storage symptoms who are taking AMs in clinical practice due to strict inclusion and exclusion criteria used in these trials.^{4–9}

Filson and colleagues previously assessed the prescribing trends of medications used to treat BOO associated LUTS using the National Ambulatory Medicare Care Survey (NAMCS) database, including the use of AMs among visits in men coded for BOO or LUTS.¹¹ In their study, the prevalence of men taking AM monotherapy in a visit coded for BOO or LUTS gradually increased over time from 1.1% between 1993 and 1995 to 5.3% between 2008 and 2010. The use of any AM among visits in men coded for BOO or LUTS increased from 1.8% between 1993 and 1998 to 7.2% between 2005 and 2010. However, the prevalence and trends of AM in combination with BOO medication therapy (AB monotherapy, 5-alpha reductase inhibitor (5ARI) monotherapy, and AB and 5ARI dual therapy) was not assessed. Currently, the extent to which AM and combination with BOO medication therapy is used in practice is not known despite the recommendation by the AUA. Therefore, the aim of this research is to determine the prevalence and trends of AM use in combination with BOO medication therapy using a population-based survey of outpatient provider visits in the United States.

Methods

Data Source

This is a cross-sectional analysis using the publicly available NAMCS database. The NAMCS is an annual national probability sample of patient visits to non-federally employed providers.¹² Providers organized as ‘office-based patient care’ by the American Medical Association or the American Osteopathic Association were included; visits to providers of anesthesiology, pathology, and radiology are not included in this sample. The survey uses a multi-stage approach in three stages: county-like designations (primary sampling units

[PSU]), a provider's practice within each PSU, and patient visits within a provider's practice.¹³ Therefore, each patient visit within a provider's practice has a different weight depending on the PSU and provider's practice within each PSU. Variables collected for the NAMCS include patient demographics, reasons for visit, vital signs, diagnoses within the visit, medications continued or initiated during the visit, and provider type.¹⁴

Study population

Men aged 40 years or older who initiated on or continued BOO medication therapy (AB monotherapy, 5ARI monotherapy, and AB and 5ARI dual therapy [Appendix 1]) from 2006 to 2014 were included in this study. Prazosin, a non-selective AB, was not included as it has limited evidence for treatment of BOO.¹⁵ In addition to BOO, other nonselective ABs (e.g., doxazosin and terazosin) may be used to treat hypertension; therefore, a sensitivity analysis was performed that included patient visits with a diagnosis of BPH or LUTS to further confirm its use for BOO.¹¹

In 2006, a new classification system was introduced in the NAMCS for reporting of medications on the patient record; therefore, 2006 was the earliest dataset used for this analysis.¹⁶ The number of medications that could be abstracted to the patient record was 8 in 2006–2011, 10 medications in 2012–2013, and 30 medications in 2014. To ensure that changes in prescribing were not due to the increased number of medication fields, only the first 8 medications listed were included in all years during the study period.¹² Additionally, the number of fields for diagnosis codes and reasons for visit were expanded from three to five in 2014; therefore, only the first three fields were assessed for visits coded for BPH or LUTS to ensure consistency across years.

Outcome Variable

The outcome variable was new or continued use of an AM (e.g., oxybutynin, tolterodine, trospium, darifenacin, solifenacin, and fesoterodine) as described in Appendix 1. The percent of visits in which an antimuscarinic was continued or initiated was identified among visits in men that continued on BOO medication therapy during the study period.

Covariates

The covariates associated with the trends of antimuscarinic therapy used in combination with BOO medication therapy are not known. The covariates that were explored included age, race, geographic region (i.e., Northeast, Midwest, South, West, Not listed), and year of survey participation. Race (e.g., White, Black, or Other) was identified using the Imputed Race variable. The diagnoses of cancer, cerebrovascular disease, congestive heart failure, chronic kidney disease, chronic lung disease (i.e., asthma or chronic obstructive pulmonary disease), dementia, depression diabetes, obesity, and osteoporosis were also explored as potential covariates confounders.

Statistical Analyses

Data were analyzed using weights derived from the sampled visits as part of the NAMCS. Sampling weights were adjusted to produce an unbiased national estimate of visit occurrences and percentages.¹² Given the complex sampling design, SAS PROC

SURVEYFREQ and PROC SURVEYLOGISTIC were used to incorporate the clustering of the survey.^{17,18} The DOMAIN procedure was used to analyze the entire study population to ensure appropriate variance estimates.^{17,18}

Baseline characteristics, univariate analyses, and multivariable analysis were reported using average annual estimates.¹² The percentage of men treated with each type of BOO medication therapy and antimuscarinic were reported. Additionally, the percentage of visits coded for BPH or LUTS were assessed to explore potential under coding if the analysis was restricted using diagnosis codes.¹¹ A sensitivity analysis was performed to assess AM use among men taking BOO medication therapy and coded for BPH or LUTS to ensure its use for BOO. Weighted odds ratios (OR) and 95% confidence intervals (CI) were calculated using PROC SURVEYLOGISTIC. Changes in the percentages of visits in which antimuscarinics were initiated or continued in men who initiated or continued on BOO medication therapy were assessed over the years relative to visits during 2006. Covariates with a p-value <0.2 were included in the initial multivariable logistic regression model. Variables with missing values in greater than 30% of observations, estimates based on <30 raw visits, or a relative standard error of >30% were considered potentially unreliable. We used an alpha of 0.05 to identify statistically significant variables. As this was an exploratory analysis, no adjustments were made for multiple comparisons.

This study was considered exempt by the <redacted> Institutional Review Board. All analyses were performed using SAS software version 9.4 (Cary, NC).

Results

Overall, there were 120,708 unweighted visits in men aged 40 or older, in which 7,561 were treated with BOO medication therapy between 2006 and 2014. When NAMCS weights were incorporated, there were 158,405,000 visits in which BOO medication therapy was used in the United States, which comprised 5.9% of visits in men aged 40 or older. There was an increasing trend in the percentage of visits in which BOO medication therapy was used with older patient age, from 3.2% (n=3,992,000) of visits in men aged 40 to 64 years old, 11.4% (n=100,527,000) of visits in men aged 65 to 84 years old, and 15.9% (n=17,959,000) of visits in men aged 85 or older were initiated on continued BOO medication therapy.

Overall, 3.7% of visits in men aged 40 or older who were treated with BOO medication therapy were treated with an AM. There was a slight increasing trend in the percentage of visits in BOO medication in combination with AM among patients with increasing age, from 3.4% (n=1,371,000) of visits in men aged 40 to 64 years old, 3.7% (n=3,740,000) of visits in men aged 65 to 84 years old, and 4.0% (n=715,101) of visits in men aged 85 or older. Oxybutynin, solifenacin, and tolterodine were the most commonly used AM in combination with BOO medication therapy (Table 1). Among visits in men aged 40 or older who were treated with BOO medication therapy, there was a slightly higher percentage of visits in men on AB monotherapy (3.9%) who were treated with an AM, compared to 5ARI monotherapy (3.0%), or AB plus 5ARI dual therapy (3.2%, Table 1).

Figure 1 describes the trends in BOO medication therapy (by individual type) and in combination with AM among visits in men between 2006 and 2014. There was a slight decrease in trend of AB monotherapy and a slight increase in 5ARI monotherapy over the study period. The use of AB and 5ARI dual therapy appeared to be consistent throughout the years with a small increase in 2009 and 2010. The use of AM in combination with any BOO medication was fairly consistent between 2006 and 2012.

Table 2 describes the characteristics, using both unweighted and weighted frequencies, of men aged 40 or older who were treated with BOO medication therapy between 2006 and 2014. Using the weighted percentages, over half of visits in men were aged 64 or older, 87.5% were white, and there were similar distributions of the number of visits among men treated with BOO medication therapy in each three year intervals. Among visits in men aged 40 or older who continued or initiated on BOO medication therapy, only one-fifth of visits were coded for BPH or LUTS.

In univariate analyses (Table 3), there was no trend in the use of AM in 2006 relative to other years ($p=0.7143$). After the other variables were incorporated into the multivariable model, there was no change in the use of AM in 2006 relative to other years ($p=0.8104$). Moreover, there was no trend in AM in 2006 relative to other years when restricting to patient visits aged 65 or older ($p=0.9684$).

As only one-fifth of visits in men treated with BOO medication therapy were coded for BPH or LUTS, we restricted to visits in men who were coded for either of these conditions. Among these visits in men, 5.7% were treated with an AM. The use of AM in combination with BOO medication therapy and coded for BPH or LUTS was similar to the main findings with no significant trends in combination with AM in the univariate analysis ($p=0.5678$). However, the number of visits with AM per individual year were based on <30 raw visits and may be potentially unreliable.

Comment

Between 2006 and 2014, the use of AM in combination with BOO medication therapy in office visits for men aged 40 and older remained unchanged in adjusted analysis ($p=0.7143$). This was consistent among visits in men aged 40 or older with BOO therapy (range 2.6% to 5.0%) and in a sensitivity analysis restricting to visits with BOO medication therapy and coded for BPH or LUTS (range 2.6% to 8.2%, $p=0.5678$). This differs from the findings by Filson and colleagues who suggested an increasing trend in the use of AM (as either monotherapy or in monotherapy plus any combination) among men coded for BPH or LUTS.¹¹ Specifically, it was noted that patient visits following the publication of TIMES, a sentinel study suggesting the safety and efficacy of AM in combination with AB published in November 2006,⁵ were 1.9 times more likely to be treated with an AM after publication compared to before publication (OR 1.93, 95% CI 1.40–2.65).¹¹ However, based on the trajectory of AM use, as published by Filson and colleagues, there already appeared to be an increasing trend of AM use prior to TIMES.¹¹

We therefore suggest that there was no increased utilization of AM in the years following the publication of TIMES in 2006. Men may not be receiving optimal medication treatment as supported by several randomized controlled trials,⁴⁻⁹ and the American Urological Association BPH guideline,³ as less than 5% of visits in men treated with BOO therapy included treatment with an AM. Although we are unable to determine which patients have urinary storage symptoms, an assessment of consecutive patients with LUTS secondary to BOO found 47% of men experienced symptoms consistent with OAB on urodynamic testing.¹⁹ Our findings using the 2006 to 2014 NAMCS database suggest potential missed opportunities for treatment with AM in combination with BOO therapy. However, before suggesting an across-the-board increase in the use of AM in men with LUTS in men treated with BOO medication therapy, more safety studies using observational data are needed to confirm that AM does not increase the risk for urinary retention or urinary catheterization as patients at higher risk for this condition may have been excluded from previous randomized controlled trials. These exclusions likely underpowered the ability to detect a difference in safety outcomes.

To note, there are several limitations to our approach. First, the data includes only a single visit and does not assess all the AM prescribing that takes place over one year. As such, visits in patients who were initiated on an AM and discontinued prior to or after collection in the NAMCS may not have been correctly identified. This is important since Lee and colleagues found that 75% of men initiated on an AM in combination with BOO medication therapy discontinued the AM within one year.²⁰ Many of these men discontinued the AM due to adverse events (35%) or lack of efficacy (33%).²⁰ Second, we were unable to determine if patients treated with BOO medication therapy were actually experiencing LUTS secondary to BOO. ABs may also be used for the treatment of hypertension, and 5ARI may be used to treat male-pattern baldness (we could not differentiate finasteride 1mg and 5mg). Therefore, in a sensitivity analysis we restricted to visits in men who were also coded for LUTS or BPH, similar to the report by Filson and colleagues.¹¹ However, since the number of fields for diagnosis codes was limited to three, there is a potential for misclassification given other comorbidities that may be coded before LUTS or BPH. Third, we are unable to determine which patients had OAB symptoms in conjunction with LUTS secondary to BOO due to the lack of clinical documentation; however, we anticipate that nearly half of patients with LUTS secondary to BOO may have underlying OAB symptoms.

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There are also many strengths of this study. First, this was the first study that assessed the use of AM over several years in combination with BOO medication therapy. This provided an understanding of the real-world use of AM treatment after publication of multiple randomized-controlled trials and the AUA practice guideline.³⁻⁹ Second, our findings suggests that there was no increase in the use of AM following publication of the TIMES study.⁵ This should encourage urologists and other providers who treat men with LUTS secondary to BOO to reassess practices to ensure treatment with AM is offered, when appropriate. Further, the low use of AM in men with LUTS may suggest that urologists and other providers may still be hesitant to prescribe these medications concomitantly due to potential adverse events such as acute urinary retention. This study justifies the need to further explore the safety of AM in combination with BOO medication therapy using

longitudinal real-world data since prior knowledge on adverse events only comes from randomized-controlled trials. Third, these findings are generalizable to outpatient visits in men the United States, give the sampling methods of the NAMCS.

Based on our findings, less than 5% of visits in men aged 40 or older and treated with BOO medication therapy are treated in combination with AM. There appears to be no trend of increased AM use in combination with BOO medication therapy in 2006 compared to subsequent years through 2014. We suggest the need for providers to reexamine their assessment of OAB symptoms in men with LUTS treated with BOO medication, as patients may be potentially undertreated for overactive bladder.

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Codes used to Identify Medications

Medications	Medication Class	Medication Name	Drug Entry Codes (MED)	Generic Codes (DRUGID)
Bladder Outlet Obstruction Medication Therapy	Alpha-Blockers	Doxazosin	92120, 92012, 08162	d00726
		Terazosin	94133, 56290, 15307	d00386
		Tamsulosin	00053, 08006, 97126	d04121
		Alfuzosin	06166, 04138	d04797
		Silodosin	10370, 09797	d07354
	5 Alpha Reductase Inhibitors	Finasteride	95177, 93127	d00563
		Dutasteride	05194, 03002	d04788
	AB-5ARI combination	Dutasteride/Tamsulosin	10304	d07634
Antimuscarinics		Oxybutynin (IR, ER, or Transdermal)	12029, 22287, 09995, 09834, 03071, 09141	d00328
		Tolterodine (IR or ER)	01050, 98065, 01057	d04294
		Trospium (IR or ER)	10251, 05266, 08179	d04929
		Darifenacin	06104, 05074	d05422
		Solifenacin	05261, 05051	d05413
		Fesoterodine	12116, 09772	d07162

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Figure 1:
Trends in the Use of Bladder Outlet Obstruction Medication Therapy and in Combination with Antimuscarinic Therapy

- Alpha Blocker and 5-Alpha Reductase Inhibitor Dual Therapy
- 5-Alpha Reductase Inhibitor Monotherapy
- Alpha Blocker Monotherapy
- Bladder Outlet Obstruction Therapy and Antimuscarinic Therapy

Table 1:

Weighted Number of Office Visits with Continuation or New Use of an Antimuscarinic Agent in Combination with Bladder Outlet Obstruction Therapy

Antimuscarinics	BOO Medication Therapy (n=158,405,000)	Alpha Blocker Monotherapy (n=111,616,000)	5-Alpha Reductase Monotherapy (n=26,536,000)	Alpha Blocker and 5-Alpha Reductase Dual Therapy (n=20,254,000)
	n (%)			
Any Antimuscarinic	5,826,000 (3.68)	4,386,000 (3.93)	786,000 (2.96)	654,000 (3.23)
Oxybutynin	1,955,000 (1.23)	1,369,000 (1.23)	409,000 (1.54) *	177,000 (0.88) *
Tolterodine	1,512,000 (0.95)	1,232,000 (1.10)	108,000 (0.41) *	172,000 (0.85) *
Trospium	148,000 (0.09) *	58,000 (0.05) *	7,000 (0.03) *	83,000 (0.41) *
Darifenacin	527,000 (0.33) *	380,000 (0.34) *	122,000 (0.46) *	26,000 (0.13) *
Solifenacin	1,579,000 (1.00)	1,329,000 (1.19)	112,000 (0.42) *	138,000 (0.68) *
Fesoterodine	214,000 (0.13) *	128,000 (0.11) *	28,000 (0.11) *	58,000 (0.28) *

* Estimates based on <30 row visits and may be potentially unreliable

BOO = Bladder Outlet Obstruction

Table 2:

Characteristics of Office Visits in Men Treated with BOO Medication(s) in the National Ambulatory Medical Care Survey, 2006–2014

		Number of Visits (%) (n=7,561)	Number of Visits (%) (n= 158,405,000)
		<i>Unweighted</i>	<i>Weighted</i>
Demographics	Age (years)		
	40–64	1,898 (25.1)	39,197,000 (25.2)
	65–84	4,835 (63.9)	100,527,000 (63.5)
	85 or older	828 (11.0)	17,959,000 (11.3)
	Race		
	White	6,723 (88.9)	138,678,000 (87.5)
	Black	541 (7.2)	11,892,000 (7.5)
	Other	297 (3.9)	7,835,000 (4.9)
	Region		
	Northeast	1,137 (15.0)	27,999,000 (17.7)
	Midwest	1,594 (20.1)	28,631,000 (18.1)
	South	2,037 (26.9)	54,777,000 (34.6)
	West	1,464 (19.4)	31,587,000 (19.9)
	Not Listed	1,329 (17.6)	15,412,000 (9.7)
	Year		
	2006	528 (7.0)	13,310,000 (8.4)
	2007	690 (9.1)	16,184,000 (10.2)
	2008	588 (7.8)	18,183,000 (11.5)
	2009	765 (10.1)	19,530,000 (12.3)
	2010	740 (9.8)	17,073,000 (10.8)
	2011	683 (9.0)	19,277,000 (12.2)
	2012	1,329 (17.6)	15,412,000 (9.7)
	2013	1,089 (14.4)	18,419,000 (11.6)
	2014	1,149 (15.2)	21,017,000 (13.3)
Urinary Condition	Benign Prostatic Hyperplasia or Lower Urinary Tract Symptoms	1,984 (26.2)	33,881,000 (21.4)
Comorbidities	Cancer	1,189 (15.7)	21,307,000 (13.5)
	Cerebrovascular Disease	355 (4.7)	7,001,000 (4.4)
	Chronic Kidney Disease	430 (5.7)	11,071,000 (7.0)
	Chronic Lung Disease	843 (11.1)	20,425,000 (12.9)
	Congestive Heart Failure	397 (5.3)	9,671,000 (6.1)
	Coronary Artery Disease	1,107 (14.6)	23,738,000 (15.0)
	Dementia	60 (0.8)	1,342,000 (0.8)
	Depression	513 (6.8)	10,766,000 (6.8)
	Diabetes	1,606 (21.2)	37,146,000 (23.5)

		Number of Visits (%) (n=7,561)	Number of Visits (%) (n= 158,405,000)
		<i>Unweighted</i>	<i>Weighted</i>
	Hypertension	3,269 (43.2)	79,269,000 (50.0)
	Obesity	572 (7.6)	13,977,000 (8.8)
	Osteoporosis	118 (1.6)	3,256,000 (2.1)
	Arthritis	299 (4.0)	7,930,000 (5.0)
Medications	Alpha Blocker Monotherapy	5,217 (69.0)	111,616,000 (70.5)
	5-Alpha Reductase Monotherapy	1,327 (17.6)	26,536,000 (16.8)
	Alpha Blocker /5-Alpha Reductase Dual Therapy	1,017 (13.5)	2,0250,000 (12.8)

Characteristics Associated with Continued or New Use of an Antimuscarinic Agent Among Office Visits in Men who were treated with Bladder Outlet Obstruction Medication Therapy in the National Ambulatory Medical Care Survey, 2006–2014 - Univariate Analyses and Multivariable Analysis

Table 3:

		Univariate Analyses		Multivariable Analysis	
		OR (95% CI)	P-Value	OR (95% CI)	P-Value
Demographics	Age (years)		0.8598	---	---
	40–64	1.00 (reference)			
	65–84	1.09 (0.71–1.66)			
	85 or older	1.17 (0.66–2.05)			
	Race		0.3879	---	---
	White	1.00 (reference)			
	Black	1.23 (0.69–2.21)			
	Other	0.65 (0.31–1.37)			
	Region		0.1039		0.1876
	Northeast	1.00 (reference)		1.0 (reference)	
	Midwest	1.02 (0.60–1.73)		0.99 (0.59–1.70)	
	South	0.77 (0.48–1.24)		0.76 (0.46–1.26)	
	West	0.57 (0.35–0.94)		0.58 (0.35–0.96)	
	Not Listed	1.04 (0.62–1.74)		0.99 (0.46–2.14)	
Comorbidities	Year		0.7143		0.8104
	2006	1.00 (reference)		1.0 (reference)	
	2007	0.87 (0.37–2.03)		0.84 (0.36–1.99)	
	2008	0.97 (0.45–2.09)		0.98 (0.46–2.13)	
	2009	1.39 (0.67–2.89)		1.40 (0.67–2.93)	
	2010	0.90 (0.41–2.00)		0.90 (0.40–2.00)	
	2011	1.04 (0.46–2.34)		1.05 (0.46–2.41)	
	2012	1.26 (0.62–2.54)		1.26 (0.62–2.55)	
	2013	0.72 (0.35–1.50)		0.71 (0.33–1.49)	
	2014	0.99 (0.46–2.15)		1.03 (0.47–2.24)	
	Cancer	1.55 (1.04–2.33)	0.0329	1.56 (1.03–2.37)	0.0360

		Univariate Analyses		Multivariable Analysis	
		OR (95% CI)	P-Value	OR (95% CI)	P-Value
	Cerebrovascular Disease	1.70 (0.80–3.61)	0.1648	1.71 (0.79–3.73)	0.1757
	Chronic Kidney Disease	0.44 (0.17–1.15)	0.0946	0.44 (0.17–1.15)	0.0951
	Chronic Lung Disease	0.99 (0.58–1.70)	0.9864	---	---
	Congestive Heart Failure	0.72 (0.31–1.68)	0.4427	---	---
	Coronary Artery Disease	0.88 (0.52–1.49)	0.6408	---	---
	Dementia	1.34 (0.41–4.36)	0.6226	---	---
	Depression	1.14 (0.60–2.17)	0.6886	---	---
	Diabetes	0.95 (0.66–1.35)	0.7526	---	---
	Hypertension	1.15 (0.81–1.65)	0.4366	---	---
	Obesity	0.92 (0.49–1.74)	0.7942	---	---
	Osteoporosis	1.91 (0.46–7.96)	0.3727	---	---
	Arthritis	0.95 (0.49–1.81)	0.8657	---	---
Medications	Alpha Blocker Monotherapy	1.0 (reference)	0.8136	---	---
	5-Alpha Reductase Monotherapy	0.75 (0.43–1.31)			
	Alpha Blocker /5-Alpha Reductase Dual Therapy	0.82 (0.53–1.26)			

OR = Odds Ratio

--- = Not included in Multivariable analysis (p 0.2)