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Tran A[1], Botros S[1], Sand P[1], Zhou Y[1]
1. *University of Chicago, Pritzker School of Medicine, NorthShore University HealthSystem*

PERSISTENCE ON PHARMACOTHERAPY FOR OVERACTIVE BLADDER SYNDROME IN A FEMALE PELVIC MEDICINE AND RECONSTRUCTIVE SURGERY DIVISION

Hypothesis / aims of study

Overactive bladder syndrome (OAB) is a chronic disorder with a lifetime prevalence as high as 30%. [1] Persistence with long-term medication to chronic diseases is low (50%) and in OAB, even lower. [1] Claims data have reported rates as low as 10% to 18% in community settings. [1,2] Persistence in routine practice has been reported to be much lower than in the clinical trial settings. Sub-optimal persistence remains a challenge to management of OAB. Given our division's practice of close patient follow-up and extensive patient counselling in OAB management, we thought to compare our division's persistence rate to that of other prescribing medical specialties within the integrated NorthShore University Heath System. Our hypothesis was that the persistence rate to OAB pharmacological therapy within our division is higher than the persistence rates reported in other real-world settings.

Study design, materials and methods

This is a retrospective comparative cohort study. Medical, pharmacy and eligibility data were extracted from the NorthShore University HealthSystem's EPIC Data Warehouse from January 2012 –December 2013, allowing for a full-twelve month potential treatment period. All data were captured by a computerized database. Data extracted included patient demographic and clinical information, prescribing physician, practice specialty, prescription information, and use of other OAB therapies. OAB was identified by ICD-9-CM codes. These included: 788.30, 788.31, 788.33-788.37, 788.39-788.43, 788.63, 596.51, 596.52, 596.55, and 596.59. All female patients between 18-99 years with at least one OAB medication prescription during the designated study period were included. Patients with history of chronic renal disease, renal or bladder carcinoma, post-void residuals greater than 300 ml or missing prescription data were excluded. The primary outcome was persistence. Persistence was defined as the mean number of days that a patient remained on continuous pharmacological therapy. Patients were considered as discontinuing treatment if they had greater than a 45-day gap between prescriptions. Patients who switched from one brand of OAB medication to another were considered persistent on therapy. Secondary endpoints included the proportion of patients utilizing advanced OAB therapies (neuromodulation and onabotulinumA). Descriptive analyses were performed on the full cohort to characterize patient's baseline characteristics and persistence rates. Multi-variate logistic regression analysis was used to compare and calculate the risk of discontinuation between persistent groups (discontinuers vs. non-discontinuers). Chi-square test was used to compare persistency among physician specialties. Two-sample T-test or Wilcoxon rank sum test was used to compare continuous variables between groups. We required a sample study of 1164 to detect a 5% difference from our null hypothesis and achieve 80%power.

Results

Results from 2,737 patients with 6,821 prescriptions during the study periods met inclusion criteria to form the study population. Twenty-six prescribing specialties were categorized into five groups: FPMRS, urology, ob/gyn/gyn, primary care and other. FPMRS prescribed 50.7% of OAB medications followed by primary care (23.6%), then urology (11.6%), (Table 1) Among our FPMRS Division at NorthShore, the persistence rates were 75.15%, 57.07%, 34.53% respectively at twelve weeks, six-months and one year. These rates compare to those of the other medical practices within the NorthShore University Health System. (Table 2) Patients had a mean age of 69 years. The majority of the cohort was retired (56%), utilized Medicare coverage (62%) and had a mean BMI of 27. The most commonly prescribed medication was solifenacin succinate (34%), then oxybutynin ER (21%), trospium chloride (12%), mirabegron (10.3%), tolterodine tartrate (8.5%), oxybutynin IR (6.2%), darifenacin hydrobromide (2.4%), oxybutynin transdermal (3.2%). 26.4% of patients utilized multiple medications for OAB management. 9.7% of patients switched medications during the study period. There was a significant effect of age and BMI on pharmacotherapy persistence at six months. The odds of medication persistence beyond 180 days increased 1.6% (P=.0061) and 3% (P=.0002) with one unit increase in age and BMI respectively. There were no statistically significant differences among the other study variables: parity, tobacco use, employment status, insurance or presence of co-morbidities (diabetes mellitus or a neurogenic diagnosis). Secondarily, 4.4% of cohort utilized advanced therapies with onabotulinum toxinA, sacral neuromodulation or percutaneous tibial nerve stimulation.

Interpretation of results

NorthShore University Health System is an integrated healthcare delivery system, which serves the northern Chicago metropolitan area. Although we hypothesized our persistence rate to be higher than the other medical practices, we found the persistence rates to be comparable among the five comparison groups within this shared system. As has been previously reported, we found persistence rates to markedly decline (22-26%) from six months to one year among all medical specialties.[1,2] It is of interest to determine what factors contribute to the declining persistence on OAB medical therapy after six months in our division. However, our findings did demonstrate a markedly lower medication discontinuation rate at twelve weeks, six months and one year compared to that reported in the literature. [1,2] Claims analyses have reported twelve month discontinuation rates greater than 80%. [1] Our persistence is higher than that which has been previously reported in other community settings of 18%. [2] Our data suggest that patients who persisted on therapy beyond six months were more likely to be older and have higher BMIs. Others have also shown that the risk of medication discontinuation decreases with increasing age.[3] Only a small percentage of our cohort employed more invasive treatment options such as onabotlinium toxin A, sacral neuromodulation and percutaneous tibial nerve stimulation. This may represent an area of focus for improving OAB management after second-line therapies.

Concluding message

This study compares the patterns of medication use in an OAB population in our FPMRS division and other medical specialties within a closed heathcare delivery system. Interestingly, we found our division's one-year persistence of 34.53% compares to that of the other medical groups. An initiative to better elucidate practice patterns that contribute to this rate would be invaluable in helping to improve long-term OAB treatment efficacy for this complex chronic disease condition. Further consideration of

barriers to utilization of non-pharmacological therapies after failed first and second line therapy may help optimize management of OAB.

Table 1. Frequency of prescribing specialty

	Frequency∞	Percent
1: FPMRS	3455	50.67
2: Primary Care*	1607	23.57
3: Urology	790	11.59
4: Others* *	613	8.99
5: OB/GYN and GYN	354	5.19

*** Internal Medicine and Family Medicine**
**** Cardiology, Cardiovascular Surgery, Child/Adolescent/Adult Psychiatry, Endocrinology, Diabetic Teaching, Emergency Medicine, General Surgery, Geriatrics, Gyn Oncology, Integrative Medicine, Medical Oncology, Neurology, Nephrology, Orthapedic Surgery and Trauma, Pediatrics, PM& R, Rheumatology**
*****Frequency Missing = 2**
∞ Frequency refers to number of prescriptions

Table 2. Persistence Rates at Twelve Weeks, Six Months and One Year by Groups

	12 weeks (P=.0610)	6 months (P=.6747)	1-year (P=.6059)
FPMRS	**75.15%**	**57.07%**	**34.53%**
Urology	**73.76%**	**51.30%**	**25.53%**
Primary Care	**79.86%**	**60.28%**	**37.32%**
OB/GYN and GYN	**80.75%**	**61.49%**	**35.40%**
Other	**79.27%**	**59.64%**	**35.27%**

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Disclosures

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