# Use of Third Line Therapy for Overactive Bladder in a Practice with Multiple Subspecialty Providers—Are We Doing Enough?

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**Purpose:** Overactive bladder impacts more than 15% of the adult population. Compliance with medical treatment is low due to inadequate symptom control or intolerable side effects. Although third line therapies have improved the treatment of overactive bladder, many patients do not receive optimal treatment. We hypothesized that third line treatment use is higher among female pelvic medicine and reconstructive surgery urologists, and we examined its use at our tertiary referral center.

**Materials and Methods:** The electronic medical record was queried for patients with overactive bladder seen in 1 year. The number of visits associated with an overactive bladder prescription and the number of patients who received third line therapy were determined and subcategorized by department. Female pelvic medicine and reconstructive surgery providers were considered separately.

**Results:** A total of 5,445 patients (8,994 visits) were seen for overactive bladder. Of all patients seen for overactive bladder 3.5% received third line therapy compared with 10.0% and 14.1% of those seen by urology providers and female pelvic medicine and reconstructive surgery providers, respectively.

**Conclusions:** The use of third line therapy was reported to be less than 5%. This rate is higher at our institution, which is likely due to multiple female pelvic medicine and reconstructive surgery providers. We also apply an algorithm that facilitates patient education on available options should first and second line treatments fail. Given the limited compliance with medical treatment for overactive bladder, we are likely missing a segment of the patient population who would benefit from third line treatment. Our data demonstrate an opportunity for urologists to improve the quality of overactive bladder treatment and subsequently improve patient quality of life.

**Key Words:** urinary bladder, overactive; urinary incontinence; transcutaneous electric nerve stimulation; female; quality of life

**Abbreviations and Acronyms**

AUA = American Urological Association

EMR = electronic medical record

FPMRS = female pelvic medicine and reconstructive surgery

OAB = overactive bladder

PTNS = percutaneous tibial nerve stimulation

SNM = sacral neuromodulation

SUFU = Society of Urodynamics, Female Pelvic Medicine and Urogenital Reconstruction

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Overactive bladder represents a major health problem in the United States, affecting more than 15% of adults older than 40 years.[1] The prevalence increases with age and represents a significant detriment to health related quality of life in patients older than 65 years.[2] It has a major financial impact on patients and the health care system due not only to treatment costs but also to decreased work productivity.[3,4] There is also an association of OAB with depression, which can further worsen quality of life.[5] In addition, OAB is associated with falls, particularly in

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the geriatric population, and the risk of falls has been shown to correlate with symptom severity.[6] Many treatments are available for OAB, ranging from noninvasive behavioral modification (first line) to medical therapy (second line) to third line, more invasive treatments, including neuromodulation, biological therapy such as intradetrusor injection of onabotulinumtoxinA or electrical therapy such as SNM and PTNS.[7]

Interest in third line treatment of OAB has been stimulated by the limited success of medical therapy. Patients often discontinue medications due to unmet expectations regarding efficacy or to intolerable side effects.[8] Indeed, a recent review demonstrated that the 6-month persistence rate for these medications ranges from 10% to 46% with the highest 12-month persistence rate reaching only 36% for trospium.[9] Interestingly there is evidence that decreased medication adherence is linked to increased health care costs.[10] One possible explanation for this phenomenon is the cost of addressing the consequences of OAB, such as treatment of depression or falls, or the cost of protective garments and pads. On the other hand, SNM, onabotulinumtoxinA and PTNS have all shown high success rates in patients with idiopathic OAB in whom conservative therapy has failed.[11–13] Despite the upfront costs these therapies may prove to be more cost-effective than medical treatment in the long term.[14,15]

It is estimated that the current percent of patients who progress to third line treatments is low at less than 5%, although to our knowledge this has not yet been documented in the literature. Considering the number of patients who do not experience success with medical treatment there is likely a large segment of the OAB population who are not receiving optimal treatment. We hypothesized that patients would be more likely to receive third line therapy when seen by urologists specifically trained in FPMRS. The objective of this study was to examine the treatment of OAB and the use of third line therapy at our FPMRS tertiary referral center.

## METHODS

The study was performed in our hospital based system with approximately 450 specialty, subspecialty and primary care physicians, and it was approved by our institutional review board. Our urology department is a tertiary referral center that includes 3 board certified FPMRS physicians. There is 1 board certified FPMRS physician in the gynecology department. We queried the EMR at our institution from October 1, 2015 to September 30, 2016 for all visits associated with an OAB related diagnosis code. The particular period was chosen so that the entire search was based on ICD-10 coding. Diagnostic codes were identified to include all possible diagnoses that pertain to OAB (N32.81, R35.0, R39.15, N39.41 and N31.8). These diagnoses included variations of urinary urgency, frequency and urgency incontinence. Patients with a concomitant diagnosis of neurogenic bladder or benign prostatic hyperplasia with obstruction (N31.9 or N40.1) were excluded from the search. We did not include nocturia or nocturnal enuresis as qualifying diagnoses since the evaluation and treatment strategies for these conditions can be quite different from those for OAB. Patients with a concomitant diagnosis of mixed incontinence were not excluded from study. However, we did not include this diagnosis in our search due to the inability to identify patients in whom stress incontinence was the predominant problem.

The query captured the total number of visits for OAB as well as the number of visits associated with an OAB prescription and the number of visits associated with a third line therapy. A visit was identified as being associated with an OAB prescription by performing a key word search in the EMR for all OAB medications (darifenacin, fesoterodine, hyoscyamine, imipramine, mirabegron, oxybutynin, solifenacin, tolterodine and trospium) in the orders associated with a visit for an OAB diagnosis. Trade names of the medications were also included in the search. Visits associated with third line therapy were identified using CPT codes 52287 (onabotulinumtoxinA), 64561 and 64581 (SNM), and 64566 (PTNS). All visits were then categorized by department with the urology department further subcategorized to examine FPMRS providers separately.

The query was refined to identify the number of unique patients seen for OAB as well as those who had an OAB prescription and third line treatment. This was categorized to identify those seen at the institution as a whole, in the urology department and by FPMRS providers specifically.

## RESULTS

Table 1 lists the results. Nearly 5,500 unique patients with an OAB diagnosis were seen at just under 9,000 visits for OAB at our institution. Of these patients 33% were seen in the urology department and 63.2% of those urology patients were seen by FPMRS providers. At the institution 17% of patients with OAB were prescribed a medication compared to 31% in urology and 33% in FPMRS urology. The incidence of patients who received third line therapy for OAB was 3.5% for the institution, 10% for the urology department and 14.1% for FPMRS urologists.

**Table 1.** *Unique patients treated for OAB at institution, in urology department and by FPMRS urology providers*

| | No. Seen | No. Prescribed Medication (%) | No. 3rd Line Therapy (%) |
|---|---|---|---|
| Institution | 5,445 | 926 (17.0) | 193 (3.5) |
| Urology | 1,837 | 574 (31.2) | 184 (10.0) |
| FPMRS urology | 1,161 | 380 (32.7) | 164 (14.1) |