

Characteristics of female overactive bladder syndrome: a retrospective cohort study #556



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Hypothesis / aims of study

Overactive bladder (OAB) syndrome, characterized by urinary urgency with or without urgency urinary incontinence, affects a significant portion of the female population, with up to 12% as reported in studies. While urgency is the primary symptom, other storage symptoms like nocturia and increased urination frequency are prevalent. Risk factors for OAB include obesity, high body mass index, advancing age, diabetes mellitus, as well as socioeconomic factors. Treatment options encompass conservative measures such as weight management and fluid intake adjustments, along with physical therapy such as pelvic floor and bladder training, and pharmacological interventions including antimuscarinic, beta-adrenergic, estrogen agents or botox. The presentation of OAB symptoms varies among individuals, with some primarily experiencing urgency while others may be more affected by frequency, incontinence, or nocturia. Additionally, many women with OAB also suffer from stress urinary incontinence, leading to a diagnosis of mixed urinary incontinence (MUI). In this retrospective single-center study spanning 15 years and including approximately 1600 patients, we aimed to characterize the patient population, evaluate treatment modalities, and assess their efficacy for a better understanding of this heterogeneous syndrome.

Study design, materials and methods

This retrospective cohort study analyzed data from 1688 women with overactive bladder syndrome or mixed urinary incontinence treated between 2007 and 2022 at a tertiary care hospital. International Review Board approval was obtained and patient informed consent was waived due to the retrospective study design (1769/2022). Inclusion criteria comprised women aged ≥ 18 with overactive bladder syndrome or mixed urinary incontinence. The diagnosis of overactive bladder or mixed incontinence was made if patients subjectively reported symptoms of urgency and frequency ("complaint of a sudden compelling desire to pass urine, which is difficult to defer", as defined by the International Continence Society) with or without urinary incontinence, and if this was consistent with a 3-day bladder diary and cystometry results. If patients described concomitant stress urinary incontinence and if this was confirmed by a positive stress test during cystometry, this was classified as mixed urinary incontinence. Data collected included demographic information, medication history, symptomatology, treatment modalities, and therapy outcomes. Descriptive statistics summarized baseline characteristics, while Cox regression models assessed therapy success, adjusting for potential confounders. Statistical significance was set at $p < 0.05$.

Results and interpretation

Overall, 18% of patients reported therapy success and 27% reported some therapy success, whereas 55% of patients never reported any therapy success. There was no statistically significant difference between therapy success of patients with mixed urinary incontinence and overactive bladder syndrome (16% vs. 22% therapy success; 27% vs. 27% some therapy success; 58% vs. 51% no therapy success, respectively). Patients with OAB received significantly more often anticholinergics, bladder training instruction, neuromodulation and local estrogen compared to patients with MUI, but significantly less pelvic floor training instruction and surgery for pelvic organ prolapse. There was no difference of the remaining therapy options (Botox, beta 3 adrenoceptor agonist, vaginal pessary) **Table 1**. Overall, patients with OAB were significantly older and therefore more frequently postmenopausal than patients with MUI; they had lower parity and fewer previous vaginal deliveries, and showed a significantly lower BMI. Diuria and nocturia frequency was similar in both groups. Almost all patients with MUI described urinary incontinence (99%), compared to 70% in the OAB group ($n=0,0000$). Significantly more women in the MUI group were smokers and they reported more often concomitant fecal incontinence.

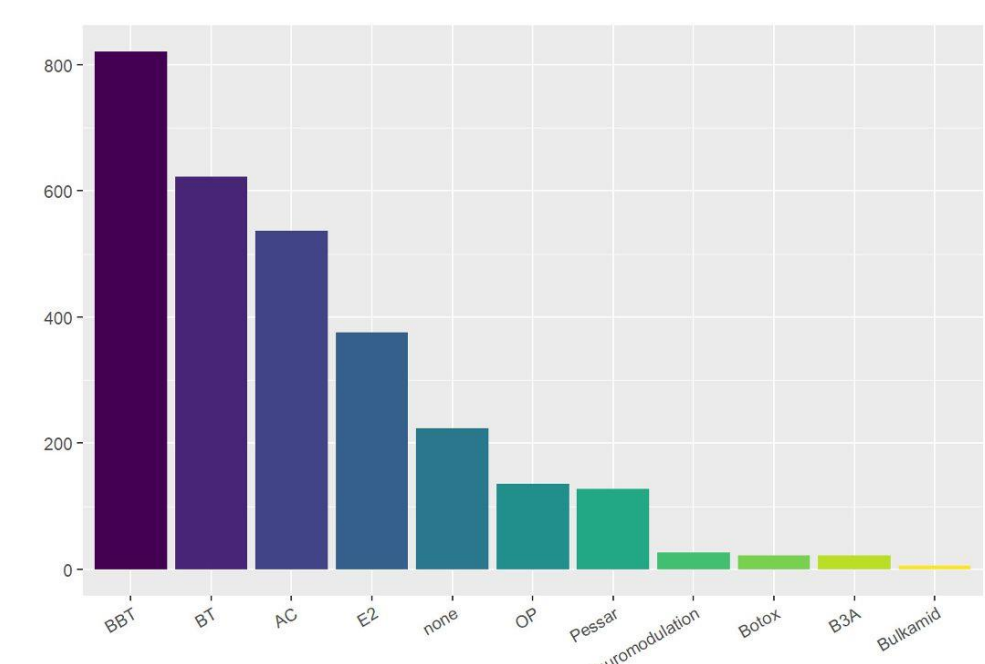
Interpretation

Of all patients who ever reported therapy success, 50% self-reported therapy success with the first prescribed therapy (0 days). Further 25% of patients self-reported therapy success 122 days after therapy initiation. However, only 18% of patients ever experienced subjective therapy success and 27% experienced only some therapy success, leaving a majority of 55% without any therapy success. Patients who suffer from OAB show significantly different characteristics than patients with MUI, including but not limited to a lower BMI and older age. The most frequently applied therapy was pelvic floor training, followed by bladder training, oral anticholinergics and local estrogen. In our population, only 22 patients received beta-3-adrenoceptor agonists, 27 received neuromodulation and 22 patients received intravesical Botox injection (Figure 1).

Table 1

	All (n= 1688)	MUI (n=1070)	OAB (n=618)	p-value
Median (IQR)				
Para	2 (1 - 3)	2 (1 - 3)	2 (1 - 3)	0,0002
Vaginal delivery	2 (1 - 3)	2 (1 - 3)	2 (1 - 2)	0,0002
BMI	28 (24 - 32)	28.57 (25 - 33)	26.93 (23 - 32)	0,0001
age	59 (47 - 69)	57 (47 - 67)	63 (50 - 70)	0,0000
diuria	10 (7 - 12)	10 (7 - 12)	10 (7 - 12)	ns
nocturia	2 (1 - 3)	2 (1 - 3)	2 (1 - 4)	ns
N(%)				
Urinary incontinence				
Yes	1488 (88.41%)	1057 (99.06%)	431 (69.97%)	0,0000
No	195 (11.59%)	10 (0.94%)	185 (30.03%)	
Surgical treatment for prolapse or stress incontinence				
yes	136 (8.07%)	102 (9.56%)	34 (5.5%)	0,0032
No	1549 (91.93%)	965 (90.44%)	584 (94.5%)	
Bulkamid	6 (0.36%)	6 (0.56%)	0 (0%)	ns
Botox	22 (1.3%)	12 (1.12%)	10 (1.62%)	ns
anticholinergics	537 (31.87%)	311 (29.15%)	226 (36.57%)	0,0016
Pelvic floor training	821 (48.67%)	598 (55.94%)	223 (36.08%)	0,0000
Bladder training	622 (36.87%)	372 (34.8%)	250 (40.45%)	0,0206
Local estrogen	375 (22.23%)	205 (19.18%)	170 (27.51%)	0,0001
Beta-3-adrenoceptor agonist (Mirabegron)	22 (1.31%)	10 (0.94%)	12 (1.95%)	ns
Neuromodulation	27 (1.6%)	11 (1.03%)	16 (2.6%)	0,0139
Vaginal pessary	128 (7.62%)	78 (7.33%)	50 (8.12%)	ns
Menopause				0,0060
premenopausal	395 (23.92%)	272 (25.95%)	123 (20.4%)	
perimenopausal	91 (5.51%)	65 (6.2%)	26 (4.31%)	
postmenopausal	1165 (70.56%)	711 (67.84%)	454 (75.29%)	
polypharmacy	414 (27.69%)	274 (28.19%)	140 (26.77%)	ns
smoking	204 (20.99%)	158 (24.76%)	46 (13.77%)	0,0001
Fecal incontinence	139 (10.27%)	111 (12.49%)	28 (6.03%)	0,0002
Therapy success				ns
yes	151 (18.02%)	85 (15.74%)	66 (22.15%)	0,0555
some	224 (26.73%)	144 (26.67%)	80 (26.85%)	
no	463 (55.25%)	311 (57.59%)	152 (51.01%)	

Figure 1



Conclusions

Patients with OAB who do not experience any therapy success with the first prescribed therapy are at higher risk of never experiencing any therapy success. There seems to be a difference in patient characteristics when comparing patients with OAB to patients with MUI.