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COMPARISONS OF URODYNAMIC AND BLADDER DIARY PARAMETERS BETWEEN OAB-WET AND OAB-DRY FEMALE PATIENTS

Hypothesis / aims of study

Overactive bladder syndrome (OAB) can be subclassified as OAB-dry and OAB-wet. It has been reported that OAB-dry may be a mild form of OAB [1]. However, the underlying pathophysiology between OAB-dry and OAB-wet may be different. To elucidate the underlying pathophysiology of OAB-dry and OAB-wet, the aim of this study is to compare urodynamic and bladder diary parameters between OAB-wet and OAB-dry female patients.

Study design, materials and methods

The medical records of OAB women who underwent urodynamic studies between September 2007 and September 2013 in the urogynecologic outpatient clinics of a tertiary referral center were retrospectively reviewed. The diagnosis of OAB-dry and OAB-wet was validated from their bladder diary. OAB-wet was diagnosed while the presence of at least one episode of urgency incontinence in her 3-day bladder diary; otherwise, OAB-dry.

Results

One hundred twenty-seven women OAB-wet women and 496 OAB-dry women were enrolled in this study. OAB-wet women were older than OAB-dry. Compared with OAB-dry women, OAB-wet women had a larger voided volume, the volume at strong desire to void and pad weight, a smaller maximum urethral pressure and maximum urethral closure pressure, higher urgency episodes, and a higher percentage of concomitant urodynamic stress incontinence (Table 1).

Table 1. Comparisons of urodynamic and bladder diary parameters between OAB-wet and OAB-dry female patients

Variable	OAB wet (n=127)	OAB dry (n=496)	P†
Age (years)	61.8±13.4	55.3±13.0	<0.001
Parity	3.0±1.8	2.6±1.6	0.005
Maximum flow rate (mL)	20.9±11.3	19.2±8.5	0.38
Average flow rate (mL)	8.6±5.5	7.7±4.2	0.27
Voided volume (mL)	245±129	281±119	0.004
Postvoidal residual volume (mL)	77±64	70±59	0.08
Voiding time (sec)	54.8±78.0	56.2±52.2	0.001
First desire (mL)	135±58	139±42	0.18
Normal desire (mL)	181±75	186±55	0.14
Strong desire (mL)	233±102	242±70	0.04
Urgency to void (mL)	302±124	308±88	0.13
Pdetqmax (cmH_2O)	35.6±21.9	31.3±19.0	0.04
VLPP (cmH_2O)	71.8±27.6	65.4±21.8	0.07
MUP (cmH_2O)	102.1±30.0	111.2±32.5	0.005
MUCP (cmH_2O)	63.3±29.5	73.3±32.2	0.001
Functional profile length (cm)	3.1±0.8	3.1±0.9	0.98
UCPA (cm^2H_2O)	101.3±53.2	121.3±62.6	0.002
Continence length (cm)	1.8±0.7	1.7±0.7	0.17
Continence area (cm^2H_2O)	55.0±34.2	61.4±35.2	0.053
PTR at MUP (%)	89.8±29.8	95.4±31.4	0.08
Detrusor overactivity	44 (35)	129 (26)	0.053
Bladder oversensitivity	101 (80)	387 (78)	0.71
Urodynamic stress incontinence	69 (54)	165 (33)	<0.001
Pad weight (g)	16.8±30.7	3.7±14.9	<0.001
DVVmax (72 hr)	359±161	356±166	0.68
Urgency episodes (72 hr)	11.5±11.1	7.2±11.8	<0.001
Urgency incontinence episodes (72 hr)	6.4±7.0	0±0	<0.001
Daytime frequency (72 hr)	29.1±10.6	31.5±16.3	0.39
Nocturia (72 hr)	4.6±4.4	4.7±4.0	0.38
Total voided volume (mL/72 hr)	5490±2478	5487±2067	0.51
Total water intake (mL/72 hr)	4845±2063	5039±1984	0.29

† Wilcoxon rank-sum test or chi-square test.

‡ DVVmax: maximum daytime voided volume excluding the morning void derived from 3-day bladder diaries; MUCP: maximal urethral closure pressure; MUP: maximal urethral pressure; Pdetqmax: detrusor pressure at maximum flow during voiding

cystometry; PTR: pressure transmission ratio; UCPA: urethral closure pressure area; VLPP: Valsalva leak point pressure.

Interpretation of results

Compared with OAB-dry women, OAB-wet women had poorer sphincter function of urethra, smaller functional bladder capacity, and higher severity of urgency. These mean that OAB-wet and OAB-dry are not only a continuum of OAB, but also having at least partly a different underlying pathophysiology. Concomitant treatment for restoration of both bladder and urethral function should be provided for OAB-wet women.

Concluding message

Besides higher severity of OAB symptoms and signs, OAB-wet women have a poorer urethral sphincter function. Different treatment strategy should be provided for OAB-wet women.

References

1. Anger JT, Le TX, Nissim HA, et al. How dry is "OAB-dry"? Perspectives from patients and physician experts. J Urol 2012;188:1811-5.

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