



Hypothesis / Aims of study

Overactive bladder is a common issue among women of childbearing age, regardless of their childbirth experience. Some of these women may exhibit detrusor overactivity in urodynamic studies. [1-2] Excluding detrusor overactivity caused by neurogenic bladder, the International Continence Society defines two types of idiopathic detrusor overactivity: phasic and terminal. [1,3] Although many studies have explored overactive bladder and detrusor overactivity under different conditions, no literature directly compares these two types of detrusor contractions. [4-5] Therefore, we aim to compare phasic and terminal detrusor overactivity in women with lower urinary tract dysfunction.

Study design, materials and methods

Between July 2009 and December 2023, medical records of all women with lower urinary tract symptoms who underwent urodynamic studies in the urogynecological department of a medical center were reviewed. The medical records of phasic or terminal DO were selected for comparison (N=290). Those with phasic and terminal DO were excluded (N=21). Wilcoxon rank sum test or chi-square test were used for statistical analysis, as appropriate. A *p* < 0.05 was considered statistically significant.

Results and interpretation

Except for the higher percentage of overactive bladder syndrome, bladder oversensitivity and urodynamic stress incontinence in phasic DO, age, parity, and stress urinary incontinence were similar in the phasic and terminal DO groups. There was no difference in PPBC, USS, OABSS and UDI scores between the phasic and terminal DO groups. But the phasic DO group had higher scores in IIQ and some domains of the King's Health Questionnaire, such as incontinence impact, role limitations, physical limitations, social limitations, emotions and sleep/energy, and symptom severity including frequency, nocturia, and nocturnal enuresis. The bladder diary parameters did not differ between these two groups, as well as the pad weight. The urodynamic parameter revealed that the phasic DO group also had a lower volume at a strong desire to void and a lower detrusor pressure at maximum flow, compared to terminal DO.

Comparison of clinical parameters between phasic and terminal DO (N=290)

Variables	Phasic DO (N=153)	Terminal DO (N=137)	<i>p</i> <sup>a</sup>
Age (years)	62.2±13.9	62.4±12.3	0.881
Pairty	2.8±1.5	3.0±1.5	0.323
Overactive bladder syndrome	95 (62)	69 (50)	0.044
Stress urinary incontinence	112 (73)	106 (77)	0.412
PPBC	3.5±1.5	3.3±1.4	0.134
USS	2.2±1.3	1.9±1.2	0.089
OABSS	7.1±3.7	6.7±3.7	0.342
UDI-6	6.4±3.8	6.0±3.9	0.385
IIQ-7	7.4±5.6	5.9±5.3	0.016
King's Health Questionnaire			
General health perception	51±21	47±23	0.309
Incontinence impact	36±24	29±23	0.008
Role limitations	41±31	34±30	0.035
Physical limitations	57±32	37±31	0.013
Social limitations	32±31	21±23	0.008
Personal relationships	16±27	14±25	0.786
Emotions	37±31	30±31	0.044
Sleep/energy	42±30	35±28	0.049
Severity measures	41±28	35±28	0.082
Frequency	2.3±1.3	1.9±1.2	0.017
Nocturia	2.3±1.2	1.9±1.1	0.006
Urgency	2.2±1.3	1.9±1.2	0.141
Urge incontinence	2.0±1.4	1.8±1.3	0.212
Stress incontinence	1.9±1.4	1.9±1.2	0.968
Nocturnal enuresis	0.8±1.1	0.4±0.8	0.003
Intercourse incontinence	0.4±0.7	0.4±0.7	0.655
Waterworks infection	1.1±1.3	0.9±1.1	0.341
Bladder pain	0.8±1.0	0.7±1.0	0.412
Bladder diary			
Urgency episodes/3 days	9.2±11.4	7.6±9.7	0.275
Daytime frequency/3 days	23.4±10.3	24.5±9.6	0.218
Incontinence episodes/3 days	2.3±4.9	3.0±7.7	0.895
Nocturia episodes/3 days	6.8±4.1	6.4±3.0	0.684
Urodynamic study and pad test			
Pad weight (g)	28±40	25±37	0.146
Maximum flow rate (ml/s)	19.6±11.2	20.0±10.7	0.603
Voided volume (ml)	224±124	252±125	0.057
Post-void residual (ml)	44±35	44±40	0.717
Strong desire to void (ml)	223±60	248±54	<0.001
PdetQmax (cmH <sub>2</sub> O)	26.1±23.3	30.3±14.6	<0.001
MUCP(cmH <sub>2</sub> O)	61.3±35.1	66.2±33.4	0.141
Pressure transmission ratio (%)	101±46	100±35	0.811
Bladder outlet obstruction index	-13.0±28.6	-8.8±26.4	0.057
Bladder contractility index	123±65	129±53	0.140
Bladder oversensitivity	139 (91)	113 (82)	0.035
Urodynamic stress incontinence	40 (26)	17 (12)	0.003

Conclusions

Women with phasic DO have smaller bladder capacity, probable lower bladder outlet resistance, greater severity of overactive bladder symptoms, and a poorer quality of life related to urinary incontinence, compared to terminal DO.

References

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