

LOWER URINARY TRACT SYMPTOMS COMPARED WITH URODYNAMIC DIAGNOSIS IN WOMEN – A RETROSPECTIVE STUDY

Hypothesis / aims of study

The routine use of urodynamic testing of women who present with lower urinary tract symptoms (LUTS) is controversial. A review of the literature found that some authors were of the opinion that clinical evaluation alone is unreliable in determining the cause of urinary incontinence¹ while others suggest that treatment outcomes are the same whether pre-treatment urodynamics have been employed or not². This retrospective study was done to investigate the relationship between the presenting symptom(s) and the diagnosis in women who had been referred for urodynamic testing.

Study design, materials and methods

Women were referred for urodynamic testing by specialist gynaecologists and urologists. All tests were conducted in accordance with the standards set by the International Continence Society (ICS).³ Uroflowmetry, a measurement of the post void residual volume, cystometry and a pressure flow study were performed and a report was written immediately upon the completion of these tests. Each report included the patient's demographics, the presenting symptom(s), the urodynamic diagnosis, a description of the findings and recommendations for management. The reports, including graphs and data, were saved in PDF format. There were 621 tests performed in the clinic between May 2007 and November 2016. Three of the tests were excluded because the cystometrogram had been abandoned. (In one case the rectal catheter kept falling out, in another there was an active urinary tract infection and in the third there was an equipment failure). The data from the remaining 618 reports was subjected to statistical analysis.

Results

We identified twelve different presenting symptoms and there were nine distinct urodynamic diagnoses. The original dataset is displayed in Table 1. Unfortunately most of the individual presenting symptoms had insufficient numbers of patients to make a statistically significant analysis. This is also true for the urodynamic diagnoses. We therefore compared three presenting symptom(s) with the urodynamic diagnosis and vice versa.

For patients who were diagnosed with Overactive Bladder Syndrome (OAB), the chance that they had presented with urge incontinence was only 31.3% (95% CI 25.2% - 38.0%). The chance of a patient who presented with urge incontinence of actually having OAB was 53.4% (95% CI 44.4% - 62.2%).

For patients who were diagnosed with Urodynamic Stress Incontinence (SUI), the chance that they had presented with the symptom of stress incontinence was 40%, (95% CI 30.0% - 50.6%). The chance of a patient presenting with stress incontinence of actually having SUI was only 26.6% (95% CI 19.4% - 34.6%).

For patients who were diagnosed with Mixed Incontinence (MI), the chance that they had presented with symptoms of both urge and stress incontinence was 68.4% (95% CI 46.1% - 86.0%). However, in patients presenting with both symptoms, the chance of actually having MI was only 6.6% (95% CI 3.7% - 10.6%).

For those women who had a normal study, 19.5% had presented with urge incontinence, 24.5% had presented with stress incontinence, 23.3% had presented with mixed symptoms of stress and urge incontinence and 32.7% had presented with other LUTS.

The study contained 429 women who were aged 50 years and over and there were 189 women who were under age 50. The data from these two groups was analysed separately in order to determine if there were any significant differences between younger and older women. However we found that there was no significant effect of age on any of the results.

TABLE 1: Complete dataset

	NS	OAB	SUI	MI	BOO	CY	OI	US	DB	Total
UI	31	63	4	1	1	3	6	8	1	118
SI	39	24	34	5	0	4	13	7	2	128
MI	37	74	38	13	2	3	13	17	0	197
NO	3	5	0	0	0	1	0	0	0	9
UU	6	10	3	0	0	0	6	0	3	28
PVD	1	0	0	0	1	1	0	0	0	3
FR	2	1	0	0	1	0	0	2	0	6
UR	25	16	1	0	2	2	2	8	0	56
PR	7	7	3	0	1	17	1	2	0	38
HE	4	1	0	0	0	1	0	1	3	10
RE	1	0	2	0	5	3	4	0	7	22
UTI	3	0	0	0	0	0	0	0	0	3
Total	159	201	85	19	13	35	45	45	16	618

SYMPTOMS

UI	Urine loss with urgency	
SI	Urine loss with cough/laugh	
MI	Mixed urge and stress incontinence	SUI
NO	Nocturia	MI
UU	Urine loss when unaware	BOO
PVD	Post void dribbling	
FR	Urinary frequency, no incontinence	OI
UR	Urinary urgency, no incontinence	US
PR	Prolapse without urinary incontinence	
HE	Hesitancy, no urinary incontinence	
RE	Urinary retention / incomplete emptying	
UTI	Recurrent urinary tract infection	

DIAGNOSES

NS	Normal study
OAB	Overactive bladder syndrome
	Urodynamic stress incontinence
	OAB + SUI
	Bladder outlet obstruction
CY	Cystocele without incontinence
	Retention with overflow incontinence
	Sensory urgency, stable detrusor
DB	Denervated (neurogenic) bladder

Interpretation of results

The results demonstrate a generally poor correlation between the clinical presentation and the expected urodynamic diagnosis. For example, of those women who presented with urge incontinence, only half of them had OAB. Similarly, urodynamic stress incontinence was diagnosed in only a quarter of those women who presented with the sole symptom of urine loss with cough/laugh. Additionally, of those women who had OAB diagnosed on urodynamic testing, only one third had presented with urine loss with urgency, one third had had mixed symptoms of urge and stress incontinence and the remainder had presented with a variety of other symptoms. By contrast, among those women who were diagnosed with urodynamic stress incontinence, eighty five percent had presented with either urine loss with stress or with mixed stress and urge incontinence. One potential weakness of the study is that the patient selection was entirely dependent upon the referral practices of the local specialists. It is possible that some of them were less likely to refer women who had been clinically diagnosed with stress urinary incontinence than those who had been diagnosed with urge or mixed incontinence. However, even if this were true, it is still apparent that a large percentage of women who presented with the sole symptom of stress urinary incontinence actually had a completely different diagnosis made upon urodynamic testing.

Concluding message

This study suggests that urodynamic testing should probably be undertaken in all women who present with urinary incontinence or other lower urinary tract symptoms prior to instigating invasive and potentially irreversible treatments such as surgery.

References

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3. Rosier P et al. International Continence Society Standard Good Urodynamic Practices and Terms. *Neurourol and Urodynam.* 2016; DOI: 10.1002/nau.23124.

Disclosures

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