

CORRELATION OF URODYNAMIC RESULTS WITH LOWER URINARY TRACT SYMPTOMS IN PATIENTS WITH MULTIPLE SCLEROSIS

Hypothesis / aims of study

The aims of this study were to compare lower urinary tract symptoms (LUTS) in men and women with multiple sclerosis (MS) presenting for urodynamics studies (UDS), to compare UDS results, and to correlate symptoms with UDS results.

Study design, materials and methods

This was a retrospective study of all patients with MS who presented for UDS over a 16-year period. All underwent a standardized history that included a detailed assessment of urologic and related symptoms. UDS included filling and voiding, when possible, subtracted detrusor pressure measurements. All data were recorded at the time of patient encounter and analysed subsequently with Visual dBase 5.7 and Graphpad Instat Version 3.06. All subjects provided informed consent at the time of UDS. Ethics review was not required for the analysis.

Results

The history and first UDS from 184 patients (123 women and 61 men) were reviewed. Follow-up studies were not included in the analysis. The mean ages of the women (48.1 years) and the men (55.5 years) were significantly different ($P < 0.05$). Impairment of mobility was similar in both groups. Similar numbers of women and men presented with storage LUTS (including frequency, urgency, urgency incontinence (UII), and nocturia > 1) (103/123 versus 46/61) and voiding LUTS (81/123 versus 39/61) ($P > 0.05$). The use of either intermittent catheterization (IC) or indwelling catheter was similar in both groups ($P > 0.05$). However, more women complained of urinary incontinence (UI) than men (99/123 versus 34/61) ($P < 0.05$).

The UDS results are in Table 1. Significant differences between women and men were seen in the higher maximum detrusor pressure on filling and the detrusor pressure at maximum flow (PdetQmax) in men ($P < 0.05$)

Table 1: UDS Results

Parameter	Women			Men			P value
	Mean	N	SD	Mean	N	SD	
Initial residual (cc)	105.85	96	111.07	131.15	46	136.88	> 0.05
Filling							
First sensation (cc)	119.86	115	98.31	138.21	52	106.28	> 0.05
Desire to void (cc)	220.26	113	129	249.8	56	142.89	> 0.05
Bladder capacity (cc)	328.29	123	156.99	383.53	58	181.19	> 0.05
Pdet Maximum (cm water)	40.06	123	31.44	50.23	61	28.35	0.0290
Voiding							
PdetQmax (cm water)	34.45	51	19.89	47.24	29	23.15	0.0158
Qmax (cc/sec)	11.89	46	11.77	9.19	27	7.53	> 0.05
Free flow rate (cc/sec)	15.7	46	11.53	12.85	13	12.71	> 0.05

Detrusor overactivity (DO) was demonstrated in similar numbers of women and men (79/123 versus 46/61) ($P < 0.05$). The finding of DO was not related to the complaint of urgency or UII in either men or women ($P < 0.05$), however, more women with stress Incontinence (SUI) had DO than those who had no SUI ($P = 0.0245$).

Table 2 shows the comparison between groups with and without voiding symptoms. There were no differences in measured parameters between women and men with voiding symptoms. Men without voiding symptoms had higher PdetQmax and lower free flow rates than women without voiding symptoms. Overall more men than women had UD obstruction (15/61 versus 6/123) ($P = 0.0003$).

Table 2: Comparison of subjects with voiding and no voiding symptoms

With voiding symptoms Parameter	Women			Men			P value
	Mean	N	SD	Mean	N	SD	
Initial residual (cc)	120.93	81	123	114.31	39	99.9	> 0.05
Voiding							
PdetQmax (cm water)	36.58	36	21.42	46.38	26	24.05	> 0.05
Qmax (cc/sec)	11.48	33	13.42	8	23	6.67	> 0.05
Free flow rate (cc/sec)	14.09	35	9.25	14.36	11	13.19	> 0.05
With no voiding symptoms							
Initial residual (cc)	70.07	42	105.76	164.23	22	209.08	> 0.05
Voiding							
PdetQmax (cm water)	29.33	15	14.4	54.67	3	10.4	0.0371
Qmax (cc/sec)	12.92	13	5.59	16	4	8.51	> 0.05
Free flow rate (cc/sec)	20.82	11	15.8	4.5	2	3.5	0.0140

There were also no significant difference seen between women with and without voiding LUTS apart from a higher initial residual ($P < 0.05$). There were no significant differences at all between men with and without voiding LUTS.

Interpretation of results

The relative numbers of men and women who presented reflected the prevalence of the disease in the population (1). Women and men present with similar LUTS although incontinence is more common in women. DO was the most common finding and was similar in both groups. Urodynamic findings are very similar in women and men. The urodynamic findings overall did not correlate well with symptoms.

Concluding message

In the investigation and management of patients with MS UDS must be interpreted in the overall context of the patients' disease. Other parameters must enter into the management algorithm

References

1. National MS Society Clinical Bulletin for Health Professionals, 2004

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HUMAN SUBJECTS: This study did not need ethical approval because No ethics committee approval was required. but followed the Declaration of Helsinki Informed consent was obtained from the patients.