

THE VALUE OF BASIC NON-INVASIVE URODYNAMIC INVESTIGATION FOR SCREENING AND DIAGNOSIS OF URINARY DISORDERS IN PATIENTS WITH MULTIPLE SCLEROSIS

Hypothesis / aims of study

Lower urinary tract symptoms (LUTS) are frequently found in patients with multiple sclerosis (MS). Although the incidence of LUTS is high, the presence or absence of symptoms is an unreliable indicator of the presence of urinary tract dysfunction. Urinary disorders in MS patients highly decrease quality of life but are normally not life threatening. Due to the fact that history taking alone is not enough to make a distinction between those patients with and those without urinary dysfunction, the need for a non-invasive investigative tool exists. We present the preliminary results concerning the value of non-invasive urodynamic investigation tools in making that distinction.

Study design, materials and methods

Patients are offered the possibility to undergo basic non-invasive urodynamic screening (bladder diary, uroflowmetry and residual urine measurement) in the neurologists office (MS-centre) in order to find abnormalities in flow pattern and/or significant residual urine (>100 ml). Afterwards patients were referred to the urology department for history taking and extended 5-channel urodynamic investigation. Furthermore all patients (male and female) were asked to fill out the International Prostate Symptom Score (IPSS).

Results

Between August 2003 and February 2004 16 patients (4 male and 12 female) were referred for extended urodynamic investigation after they had undergone basic screening in the MS-centre. Mean MS duration 5 years (range 1-14 years). Mean Expanded Disability Status Scale (EDSS)-score 3.64 (range 1.0-7.5). 8/16 Patients reported urological complaints on history taking (urge incontinence, urgency/frequency and hesitation with the sensation of residual urine). The complaints were present for 1 till 3 years.

Basic urodynamic screening showed abnormalities in 12/16 patients. 10/12 had significant residual urine, 4/12 an abnormal flow pattern and 2/12 a 'silent' urinary tract infection (UTI). Extended urodynamic investigation showed abnormalities in 7/8 patients without bladder complaints (table 1). 6/8 Of these patients had shown abnormalities on basic urodynamic screening. 6/8 Patients with bladder complaints on history taking had abnormalities on basic urodynamic screening. In 8/8 patients the complaints could be confirmed during extended urodynamics (table 2 and 3).

Conclusion

In this preliminary analysis basic urodynamic screening has shown to be of value in determining the presence of urinary tract dysfunction in MS patients. Lower urinary tract dysfunction can be exposed by basic urodynamic screening in nearly all patients. This analysis supports the hypothesis that on the basis of the outcome of basic urodynamic screening it is possible to discriminate between those patients with and without dysfunction. Our results strongly suggest further research should be done in order to determine the feasibility of implementation of basic urodynamic investigation in the current care for MS patients.

Table 1

	Neurologic status		Urological complaints on history taking	Basic Screening				Urodynamic							Extended Urodynamics				
	Duration of MS (years)	EDSS		UTI	Abnormal flowpattern	Significant residual urine	IPSS	Disturbed bladder sensations	Low bladder capacity	Neurogenic overactive bladder	Straining	Detrusor Externe Sfincter Dyssynergia	No detrusor activity	Significant residual urine					
1	14	7.5	+	-	+	+	33/2	-	-	-	+	+	-	+					
2	5	6.5	-	-	-	-	8/1	-	+	-	-	-	-	-					
3	10	4.5	+	-	-	+	20/4	+	+	+	-	-	-	-					
4	2	4.0	+	-	+	+	9/2	-	-	-	+	-	-	-					
5	4	4.0	+	-	-	-	23/5	-	+	-	+	-	-	-					
6	1	4.0	-	+	-	-	6/1	+	-	-	-	-	-	-					
7	4	3.5	+	-	-	+	22/4	+	-	-	-	-	-	+					
8	2	3.5	+	-	-	+	-	+	+	+	-	+	-	+					
9	4	3.5	+	-	+	+	32/4	+	-	-	-	-	-	+					
10	3	3.0	-	-	-	-	23/3	-	-	-	-	-	-	-					
11	3	3.0	+	-	-	-	15/1	-	-	-	+	-	-	-					
12	4	3.0	-	-	+	-	17/3	-	-	-	+	-	-	+					
13	1	3.0	-	-	-	+	0/0	+	-	-	-	-	-	+					
14	1	2.5	-	-	-	+	9/2	-	-	-	+	-	-	-					
15	1	2.5	-	+	-	+	2/0	+	-	-	-	-	-	-					
16	1	1.0	-	-	-	+	7/2	-	+	-	-	-	-	-					

Table 2

		Extended urodynamics		
		Positive (+)	Negative (-)	
Complaints	Positive (+)	8 (true positive)	0 (false positive)	100% (predictive value)
	Negative (-)	7 (false negative)	1 (true negative)	12,5% (predictive value)
		87,5% (sensitivity ratio)	100% (specificity ratio)	

Table 3

		Extended urodynamics		
		Positive (+)	Negative (-)	
Complaints and basic screening	Positive (+)	14 (true positive)	0 (false positive)	100% (predictive value)
	Negative (-)	1 (false negative)	1 (true negative)	50% (predictive value)
		93% (sensitivity ratio)	100% (specificity ratio)	