

Authors: HD Bradshaw, SC Radley, DJ Rosario, CR Chapple
Institution: Departments of Gynaecology & Urology, Central Sheffield Teaching Hospitals
Title: LONG TERM OUTCOME FOLLOWING SYMPTOMATIC AND URODYNAMIC ASSESSMENT OF THE OVERACTIVE BLADDER.

Aims:

To prospectively examine outcome measures including symptom severity and quality of life following investigation and treatment of the overactive bladder. To evaluate urodynamic factors predictive of outcome.

Methods:

106 women with overactive bladder symptoms (OAB) completed a lower urinary tract symptom questionnaire (BFLUTS) and generic QOL questionnaire (SF36) and underwent conventional (CMG) and ambulatory urodynamics (AUM). Conduct and interpretation of CMG followed ICS recommendations. AUM was performed according to a standard 3 hour protocol including provocative tests with cold water handwashing. At follow up (median interval 31 months) 70 women returned repeat questionnaires and a further questionnaire regarding their treatment in the interim.

BFLUTS items clinically associated with OAB were identified and those which demonstrated the highest inter-item correlation were summed to form an 'urge score' The 'urge score' consisted of 5 items addressing urgency, urge incontinence, nocturnal enuresis, unprovoked leakage and volume of urine loss. (Cronbach's alpha=0.83).

Table 1.		responders n (%)	non-responders n (%)	P=
Mean age {range}		53 {23 - 79}	51 {29 - 76}	0.79 [#]
AUM	Normal	9 (13)	8 (22)	0.64* 0.83*
	Mixed GSI + DI	15 (21)	6 (16)	
	DI	32 (46)	17 (50)	
	GSI	8 (11)	5 (14)	
	Uninterpretable	6 (9)	0	
CMG	Normal	26 (37)	14 (42)	0.18* 0.29*
	Mixed	5 (7)	5 (14)	
	DI	13 (19)	9 (25)	
	GSI	26 (37)	6 (19)	
	Did not attend	0	2	

Results:

There were no significant differences in age or urodynamic diagnosis in responders and non-responders (Table 1). Of the 70 responders, 30 women had been prescribed anticholinergic therapy and 14 were continuing to take this. A total of 13 had undergone bladder neck surgery.

Correlation between follow up urge score and the patient's reported response to medical treatment was 0.51** (p=0.001). Higher urge scores correlated with increasing detection of bladder overactivity on AUM

($r=0.46^{**}$, $p=0.001$) whereas instability on CMG correlated weakly with urge scores ($r=0.23^{**}$, $p=0.05$). Correlation between urge score and the detection of GSI on AUM and CMG was absent or weak ($r=0.15$ $p=0.13$ and $r=0.26$ $p=0.05$ respectively). (**Spearman's rho).

Table 2	AUM CMG	Unstable Unstable	Unstable Stable	Stable Unstable	Stable Stable
All respondents	N	15	32	1	16
Median urge score (range)	Baseline	52 (15-75)	45 (10-95)	50	22 (5-55)
	Follow up	45 (5-75)	30 (5-90)	30	18 (0-18)
	**p=	0.24	0.005		0.18
Anticholinergic therapy	N	8	12	0	3
Median urge score (range)	Baseline	45 (15-55)	45 (25-80)		40 (30-55)
	Follow up	45 (25-75)	40 (15-90)		30 (20-50)
	**p=	1.00	0.40		0.10
BN surgery	N	1	6	0	3
Median urge score (range)	Baseline	75	58 (40-90)		35 (3-55)
	Follow up	75	15 (10-52)		30 (5-55)
	**p=		0.08		0.29

The 24 women who had bladder overactivity during both CMG and AUM had higher urge scores than those who had bladder overactivity on one modality only. ($p=0.001$, Kruskal Wallis). There was no significant difference in response to anticholinergic therapy between those women who had bladder overactivity on both CMG and AUM and those women who had no bladder overactivity during either test (Table 2). In women undergoing bladder neck surgery, the detection of instability on AUM did not preclude improvement in urge symptoms post operatively.

SF36 QOL scores were significantly worse than in a sample of age-matched controls in a community survey. The greatest differences were observed in physical functioning and physical role limitations. Scores did not change significantly following intervention despite symptomatic improvement measured in the BFLUTS.

Conclusion:

Detection of bladder overactivity during both CMG and AUM is associated with more severe symptoms than bladder overactivity detected in one modality alone. Although symptomatic improvement was greatest in women with bladder overactivity on AUM only, a large proportion of this improvement was observed in women who underwent bladder neck surgery for GSI. The detection of bladder overactivity (with either CMG or AUM) does not appear to be predictive of response to anticholinergic therapy. AUM appears to detect a wide spectrum of bladder overactivity, some of which may not be clinically relevant. An objective approach to quantitative interpretation of AUM studies is therefore essential. These findings support empirical medical treatment of symptoms of OAB. The urodynamic detection of bladder overactivity correlates well with symptoms of OAB, however, this finding in 5 women during AUM did not preclude a favourable outcome to bladder neck surgery. An 'urge score' based on the BFLUTS questionnaire appears to be a valid instrument in this context and is sensitive to change. However, women with OAB report poor QOL (assessed on SF36) which does not significantly improve following treatment.

Students t test, *Chi squared test, ** Mann Whitney U test

