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CORRELATION BETWEEN THE OVERACTIVE BLADDER SYMPTOMS (OAB) IN MEN AND THE URODYNAMIC (UD) FINDINGS

Hypothesis / aims of study
Overactive bladder symptom (OAB) is fairly common in men. The primary objective of this study is to assess the correlation between the OAB symptoms and the Urodynamic finding (UD). The secondary objective is to report the predictors for the bladder outlet obstruction (BOO).

Study design, materials and methods
This is a retrospective study for all UD studies that were done for male patients with OAB from 1994 to 2008 in one center. The UD findings were reported by one Physician (JG). Patients with stress urinary incontinence (SUI), incomplete UD study, neurogenic disorders, previous lower urinary tract surgery, prostate cancer, pelvic radiation therapy, urinary tract infection or using catheterization were excluded. The BOO was defined with the bladder outlet obstruction index. Any value above 40 was considered as BOO. ($BOOI = p_{det},Q_{max} - 2xQ_{max}$). Spearman correlation coefficients were determined to evaluate the correlation between the OAB symptoms and the urodynamic finding. To determine the independent factor of Detrusor Overactivity (DO) and BOO, multivariate logistic regression analysis was used

Results
There were 668 reports included in the final analysis. The mean age of the patients was 67 years (30-90) and the median duration of the symptoms was 12 months (3-280). All patients had symptoms of urgency with or without urgency urinary incontinence (UUI). The presence of frequency was reported in 612 (91%), nocturia in 537 (80%), slow stream in 540 (80.1%), incomplete emptying in 517 (77%) and UUI in 314 (47%). The DO was documented in 258 patients (38.6%) and 293 patients (43.9%) had evidence of BOO

Interpretation of results
The urgency had negative correlation with presence of BOO (-0.16) and positive correlation with DO (0.14). The frequency had negative correlation with bladder capacity (-0.17). Nocturia had negative correlation with maximum flow rate (MFR) (-0.18) and bladder capacity (-0.17) but had positive correlation with DO (0.15). Slow stream had negative correlation with MFR (-0.21) and DO (-0.11). Incomplete empty had negative correlation with DO (-0.1). UUI had positive correlation with DO (0.21) (Table 1). Multivariate analysis showed age (OR 1.04) and UUI (OR 2.3) were significant for DO while slow stream was not (OR 0.6). Age, slow stream and incomplete emptying were positive predictor for BOO presence with odd ratio of 0.03, 2.1 and 3.1 respectively while the urgency was against the presence of BOO with odd ratio of 0.4 (Table 2).

Concluding message
Male patient with OAB usually has smaller bladder capacity and higher incident of DO. Older patients had higher rate of DO and BOO. Most patients with OAB had concomitant voiding symptoms. More than third (43%) of these patients had evidence of BOO. Severe urgency had significant negative correlation with BOO.

Table 1: Correlation between the OAB symptoms and UD findings.

Symptom		MFR	VV	RES.	MCC	DO	BOO
Urgency	correlation	0.09	-0.01	-0.003	-0.02	0.14	-0.16
	p value	0.5	0.72	0.93	0.57	**0.00**	**0.00**
Frequency	correlation	-0.02	-0.02	-0.03	-0.17	-0.01	0.05
	p value	0.5	0.52	0.37	**0.00**	0.64	0.18
Nocturia	correlation	-0.18	-0.15	-0.02	-0.17	0.15	0.05
	p value	**0.00**	**0.00**	0.49	**0.00**	**0.00**	0.24
Slow Stream	correlation	-0.21	-0.09	0.07	0.04	-0.11	0.04
	p value	**0.00**	**0.01**	0.08	0,22	**0.01**	0.25
Incomplete Emptying	correlation	-0.07	-0.05	0.07	0.01	-0.103	0.03
	p value	0.05	0.16	0.05	0.65	0.01	0.47
UI	correlation	0.07	-0.04	0.05	-0.06	0.21	0.01
	p value	0.06	0.23	0.14	0.08	**0.00**	0.79

Table 2: Multivariate analysis for presence of detrusor overactivity and bladder outlet obstruction.

Factor	Detrusor Overactivity		Bladder Outlet Obstruction	
	P value	Odd ratio	P value	Odd ratio
Age	**0.00**	**1.04**	**0.00**	**1.02**
Duration				
Urgency			**0.00**	**0.4**
Frequency				
Nocturia				
Slow Stream	**0.02**	**0.6**	**0.01**	**2.08**
Incomplete emptying			**0.03**	**3.1**
Urge urinary incontinence	**0.00**	**2.3**		

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Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Research Ethic Board for the Capital District Health Authority**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**