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INTERRELATIONSHIP OF BLADDER COMPLIANCE WITH URODYNAMIC ASSESSMENT OF FEMALE URINARY INCONTINENCE.

Hypothesis / aims of study
To understand the compliance characteristics of the bladder in women with urinary incontinence. We analysed urodynamic studies in women with detrusor overactivity, urodynamic Stress incontinence and voiding dysfunction. Data on the interrelationships of bladder compliance, Detrusor overactivity and urodynamic stress incontinence and voiding dysfunction in women are scarce and were therefore assessed in this study.

Study design, materials and methods
The basic demographic details including age and parity were included for analysis. All women who presented with urinary incontinence were evaluated with urodynamic assessment by using LifeTech™ at a filling speed of 50 ml/minute. The tests including filling and voiding cystometry, Urethral pressure profilometry and post-void residual measurement were used. Bladder compliance was recorded by the computerised analyser (Bladder volume / Bladder pressure -ΔV/ Δp) at 4 levels - first desire, normal desire, strong desire and at urgency ; End-detrusor pressure was noted in the analysis for all women. Women were classified into 4 groups based upon the diagnosis at the end of urodynamic assessment: Normal urodynamic study, Detrusor overactivity, urodynamic stress incontinence and voiding dysfunction. Women with mixed urinary incontinence and pathological neurological state were excluded.

Results
The diagnoses for this study are Detrusor Overactivity (DO), Urodynamic Stress Incontinence (USI) and (Voiding dysfunction (n=27). The study was controlled by women with normal urodynamics (ND). Groups were matched for age and parity.

	DO (n=85)	USI (n=100)	VD (n=27)	ND (n=28)	P
Co.FD	**18 (11-33)**	**20.5 (13-27)**	**27 (17-43)**	**22.5 (15-33)**	**0.298**
Co. ND	**(11-39) 20***	**(22-72) 34**	**(25-67) 44**	**(23-48) 32**	**<.001**
Co.SD	**(10-40) 17***	**(23-65) 42**	**(26-65) 43**	**(29-61) 47**	**<.001**
Co.Urg.	**(7-34) 15***	**(27-69) 41**	**(24-80) 42**	**(29-60) 45**	**<.001**
EDP	**(10-32) 22***	**(5-12) 8**	**(4-14) 9**	**(7-11) 8**	**<.001**

Data is (Bladder volume / Bladder pressure -ΔV/ Δp) presented as median and interquartile range, p by ANOVA. **Co.ND**- Compliance at normal desire, **Co.FD**- Compliance at first desire, **Co.SD**- Compliance at strong desire, **Co.Urg**- Compliance at urge desire, **DO-** Detrusor overactivity, **ND**- Normal urodynamics, **USI-** Urodynamic stress incontinence, **VD**- Voiding dysfunction, **EDP-** End-detrusor pressure. *=p<0.05 from all other groups.

Interpretation of results
In this study, interestingly there is no statistical significant difference between these groups when compliance was analysed at first desire, Overall, compliance was poor (**<30 ml/cm H_2O)** in detrusor overactivity. However, compliance at normal desire, strong desire and at urgency are significantly different between DO group and other groups.

Concluding message
The proportion of women with poor compliance is higher in the group with detrusor overactivity than in those with normal, stress incontinence and voiding dysfunction. From this study it appears that compliance analysis is more valuable at normal desire, strong desire and urgency than at first desire. Future research is required on compliance in large number of women with urinary incontinence at all four desires to confirm these findings.

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HUMAN SUBJECTS: This study did not need ethical approval because This is an observational study during routine urodynamic assessment and did not follow the Declaration of Helsinki - with approval by the ethics committee - in the sense that observational study during routine urodynamic assessment Informed consent was not obtained from the patients.