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IN WOMEN WITH MIXED INCONTINENCE, URGE INCONTINENCE EPISODE FREQUENCY IS THE ONLY PREDICTOR OF QOL

Hypothesis / aims of study
Urinary diaries are widely recognized as important clinical and research tools. Commonly abstracted diary variable values include measures of urinary frequency, voided volumes and incontinence episode frequency. There have been few studies of the utility of each of these diary measures as measures of symptom severity. Our objective was to determine the relationship of diary information to condition-specific bother and quality of life (QOL) in women with mixed urinary incontinence (MUI) symptoms, and secondly, to determine the reproducibility of consecutive 7-day urinary diary variable values.

Study design, materials and methods
Following approval by our institutional review board, Forty-seven subjects with MUI symptoms completed 2 consecutive 7-day urinary diaries as part of a larger study. Diary variables included the number and volume of voids and number of urge and stress incontinence episodes per day. Subjects also completed short forms of 2 validated condition specific QOL questionnaires: Urinary Distress Inventory (UDI-6) and Incontinence Impact Questionnaire (IIQ-7); and Medical Epidemiological and Social Aspects of Aging (MESA) incontinence screening questionnaire. Women were diagnosed with MUI and included in the analysis if they responded positively to at least one stress and one urge item on the screening MESA. Test-retest reproducibility was investigated by calculating Spearman's correlation coefficients between number of incontinence episodes and 24-hour voided volumes at both time points. Spearman's Correlations were used to investigate the relationships between diary content and severity of symptoms. Multivariate linear regression was used to determine All tests considered significant at the 5% level.

Results:
Mean age was 62 (34-86) years, and median number of incontinence episodes per week was 7±22. Most diary variables, including number of urge incontinence episodes, total voids, and 24-hour voided volume, and questionnaire responses (UDI6, IIQ7 and MESA stress and urge subscale scores) were highly correlated at both time points. (Table 1) Surprisingly, the number of stress incontinence episodes was not correlated on the two diaries (ρ = 0.16, p =0.32). MESA urge subscale scores correlated moderately with number of urge incontinence episodes on diary (ρ=.35, p<.047); however, MESA stress subscale scores did not correlate with number of stress incontinence episodes on diary. UDI and IIQ were moderately correlated with the total weekly number of incontinence episodes (ρ=.54 and ρ=.641 respectively, p<.0001). Using multivariate linear regression, number of urge incontinence episodes was the only predictor for incontinence severity as determined by UDI6 (β=.04, p < 0.03).

Interpretation of results
In women with MUI, bother from incontinence correlated more strongly with the frequency of urge incontinence than stress incontinence episodes on urinary diary. While a 7-day urinary diary is a reliable method for assessing the frequency of urge incontinence episodes in women with mixed incontinence, it may be a less reliable tool for recording stress incontinence.
Conluding message:
The number of urge incontinence episodes is the only predictor factor for QOL severity in mixed incontinence symptoms.

Table 1. Spearman's correlation between repeated measures

Repeated measures in 2 consecutive weeks	Mean value week 1	Mean value week 2	Spearman's correlation ρ	P value
Weekly number of urge incontinence episodes	2.3±4	0.9±2	.938	0.0001
Weekly number of stress incontinence episodes first week	11.9±22	9.4±22	.02	0.32
Mean voiding frequency per 24 hours	8.75±2.2	8.96±2.5	..884	0.0001

Mean daytime voiding frequency	7.85±1.7	8±7.9	.822	.0001
Mean nighttime voiding frequency	.89±1	1±1	.867	.001
Voided volume per 24 hours	1470±495	1684±582	.95	0.0001

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CLINICAL TRIAL REGISTRATION: **This clinical trial has not yet been registered in a public clinical trials registry.**
HUMAN SUBJECTS: **This study was approved by the IRB-Loyola University, Chu\icago, illinois and followed the Declaration of Helsinki Informed consent was obtained from the patients.**