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INSENSIBLE URINE LOSS, POST-MICTURITION DRIBBLING, NOCTURNAL ENURESIS, AND COITAL INCONTINENCE: WHAT DOES URINARY INCONTINENCE MEAN TODAY?

Hypothesis / aims of study

To date, no study has described the correlation of urinary incontinence symptoms apart from stress urinary incontinence (SUI) and urgency urinary incontinence (UUI) to urodynamic diag-noses in a patients complaining of urinary incontinence (UI) in patient population presenting to a Urogynecology practice. UI is a common condition, affecting 16% of non-pregnant women older than 20 in the United States [1]. In women from age 25 to 84, 15% have complaints of bothersome SUI, and 13% have complaints of UUI [2]. More women are wearing incontinence pads, increasing the difficulty in determining etiology of UI. Many patients present with complex UI complaints, including insensible urine loss, post-micturition dribbling, nocturnal enuresis, coital incontinence, or continuous urine leakage, as described by the International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology of urinary incontinence [3]. The objective of this study is to determine the correlation of UI symptoms beyond SUI and UUI to diagnoses made on urodynamic testing among women presenting with complaints of UI in a tertiary referral center.

Study design, materials and methods

This is a retrospective cross-sectional review, approved by the institutional review board, of patients who presented to one provider in the Division of Urogynecology with complaints of UI between January, 2014 and August, 2016. 432 patients were included based on the com-plaint of UI at their first visit and completion of urodynamic testing. The following symptoms were routinely asked and recorded: SUI, UUI, insensible urine loss, nocturnal enuresis, post-micturition dribbling, and coital incontinence. Definitions conformed to the standards jointly recommended by the International Incontinence Society (ICS) and the International Urogynecological Association (IUGA). All patients underwent diagnostic testing by urodynamics. Pearson correlations were calculated to determine the relationship of symptom complaints. The symptoms were then correlated to diagnoses made on urodynamic testing, including urodynamic stress incontinence (USI) and detrusor overactivity (DO) by using logistic regression in SPSS (2015). Sensitivities, specificities, positive and negative predictive values (PPV, NPV) were also calculated. The condition was considered to be the urodynamic diagnoses and the symptom was considered to be the test.

Results

The average patient age was 61, BMI 29 kg/m2, and parity was 2. Nocturnal enuresis was commonly seen in women with complaints of insensible urine loss. Coital incontinence was more commonly accompanied stress urinary incontinence. Table 1 lists the number and percentage of patients with each symptom who had DO, USI, both, or were continent. Each symptom was reported that was recorded, so one patient may have had more than one symptom. Table 2 lists the sensitivity, specificities, and predictive values of the SUI and UUI with DO and USI. Logistic regression analysis showed an association between UUI and DO (OR 4.5, $p<0.01$) and SUI and USI (OR 4.2, $p<0.01$). No other symptoms were significantly associated with either DO or USI.

Interpretation of results

There were no significant correlations between individual urinary incontinence symptoms and urodynamic diagnoses other than SUI and UUI. The sensitivity of UI symptom to urodynamic diagnosis was high for both DO and USI, but the specificity was low. UUI was more predictive of DO with high PPV but both had low NPV.

Concluding message

Urinary incontinence in women is complex and may be characterized by several different sub-types. Predicting the underlying cause of UI based on patient history is unreliable. Urodynamics clarifies a diagnosis in such patients.

Table 1: Urinary incontinence symptoms by urodynamic diagnoses

	DO n (%)	OR (p value)	USI n (%)	OR (p value)	Both n (%)	Continent n (%)	Total n
UUI	121 (33.4)	4.5 (<0.01)*	45 (12.6)	1.9 (0.02)*	172 (48.2)	19 (5.3)	357
SUI	73 (23.7)	0.9 (0.6)	54 (17.5)	4.2 (<0.01)*	157 (51)	24 (7.8)	308
IUL	33 (27.7)	1.0 (0.9)	19 (16)	1.2 (0.4)	59 (49.6)	8 (6.7)	119
PMD	43 (30.7)	1.2 (0.5)	16 (11.4)	0.8 (0.3)	68 (48.6)	13 (9.3)	140
NE	31 (34.8)	1.5 (0.2)	13 (14.6)	1.1 (0.8)	44 (49.4)	1 (1.1)	89
CI	2 (15.4)	0.3 (0.07)	3 (23.1)	1.1 (0.9)	6 (46.2)	2 (15.4)	13

UUI=urgency urinary incontinence
SUI=stress urinary incontinence
IUL=insensible urine loss
PMD=post-micturition dribbling

NE=nocturnal enuresis
CI=coital incontinence
DO=detrusor overactivity
OR=odds ratio
USI=urodynamic stress incontinence
*p value <0.05 was considered statistically significant

Table 2: Sensitivities, specificities, predictive values of SUI/UUI

	Symptoms	
	SUI	UUI
Sensitivity	82.4% (211/256)	88.8% (293/330)
Specificity	44.9% (79/176)	37.3% (38/102)
Positive predictive value	68.5% (211/308)	82.1% (293/357)
Negative predictive value	63.7% (79/124)	50.7% (38/75)

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