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IS THERE A RELATIONSHIP BETWEEN THE COMPLAINTS OF THE AMOUNT OF URINE LOSS AND THEIR OBJECTIVE AND SUBJECTIVE MEASUREMENTS?

Hypothesis / aims of study:

To evaluate the relationship between the complaints of the amount of urine loss and their objective and subjective measurements.

Study design, materials and methods:

Cross-sectional study conducted during the period of July 2011 to December 2013. Data were collected in Urogynecological Departments of two tertiary hospitals. Women with symptoms of Stress Urinary Incontinence (SUI) and Mixed Urinary Incontinence (MUI) were included in the study. Urodynamic study and ambulatory pad-test were performed to detect objectively their urine loss. Subjective symptoms were evaluated using the International Consultation on Incontinence Questionnaire – Short Form (ICIQ-SF). The second question of ICIQ-SF, about the amount of leakage, was used to divide the groups: little (Li), moderate (Mo) and severe (Se). Valsalva Leak Point Pressure (VLPP) in urodynamic and the difference in the pad weigh after and before the sequence of exercises were compared between the three groups. Generic and specific Quality of life (QoL) questionnaires were applied: Medical Outcomes Study 36-item short-form (SF-36) and King's Health Questionnaire (KHQ), respectively. Sexual function was evaluated through the Pelvic Organ Prolapse/Incontinence Sexual Questionnaire (PISQ-12). Questionnaire scores were also compared between the three groups. Data were submitted to descriptive statistics, using SPSS, version 20.0. Kruskal-Wallis tests were used to determine differences between their objective and subjective assessments, and the level of significance was set at < 0.05 . Then, Spearman correlation coefficients were calculated for ICIQ-SF total score, social and clinical characteristics, PISQ-12, VLPP and pad weigh. The present study was approved by the Ethics Committee of the local Hospital. Written informed consent was obtained from the patients.

Results:

During this period, 336 women were evaluated in the Departments. Only women with symptoms of SUI or MUI and who answered ICIQ-SF were included in this study, leaving a total of 256 women. In order to visualize better the results, we decided to separate the study in women with SUI ($n=92/35.4\%$) and women with MUI ($n=168/64.6\%$). In the first part of the study, variables were compared in the groups according to the amount of urine leakage. Among women with SUI, the following characteristics were similar ($p>0.05$) between the groups Li, Mo and Se: age, schooling, income, smoking years, body mass index, parity, weigh of newborn, pelvic organ prolapse stage and physiotherapy assessment. VLPP values were similar between groups, but pad-test weigh was significantly different (Table 1). SF-36 scores and PISQ-12 were similar between groups, but the following domains in KHQ were significantly different: urinary impact, daily activity limitation and social limitation (Table 1). Among women with MUI, social and clinical characteristics were also similar between the groups Li, Mo and Se, except for body mass index ($Li=28.2$; $Mo=31.9$; $Se=29.0$; $p=0.006$). VLPP values and pad-test weigh were similar between groups (Table 2). SF-36 scores and PISQ-12 were also similar between groups, but the following domains in KHQ were significantly different: urinary impact, daily activity limitation and emotional problems (Table 2). In the second part of the study, variables were compared according to the ICIQ-SF total score, which represents the woman's perception about the severity of incontinence. Among women with SUI, there was correlation with the number of pads per day ($r_s=0.516/p=0.00$), parity ($r_s=0.239/p=0.02$), pad-test weigh ($r_s=0.339/p=0.017$) and worse sexual function ($r_s= -0.320/p=0.024$). Among women with MUI, there was correlation with the number of pads per day ($r_s=0.342/p=0.00$), smoking years ($r_s=0.190/p=0.01$) and body mass index ($r_s=0.186/p=0.02$).

Interpretation of results:

Pad-test was able to detect differences in the amount of urine leakage(1) noticed by women with SUI, but not in women with MUI. This could be explained by the fact that the exam couldn't detect urgency episodes in all patients. Urodynamic study was similar in the groups, since its purpose is detect the effort necessary to lose urine, not the amount of leakage. QoL evaluation revealed that KHQ, a specific instrument for urinary incontinence, showed significant difference between the groups, which didn't happen in SF-36 or PISQ-12. Women with SUI who use more pads per day, multiparous, with bigger lost in pad-test and worse sexual health have worse QoL according to ICIQ-SF. Smoking and obese women with MUI who use more pads per day have worse QoL according to ICIQ-SF.

Concluding message:

Pad-test and KHQ are the best methods to evaluate objectively and subjectively, respectively, the amount of urine leakage perceived by women with SUI.

Table 1 – Comparison of objective and subjective assessments in women with Stress Urinary Incontinence according to the amount of urine leakage, answered in ICIQ-SF ($n=97$).

Variables	Little amount ($n=44/42.7\%$) Md	Moderate amount ($n=25/31.5\%$) Md	Severe amount ($n=23/25.8\%$) Md	p*
VLPP (cmH ₂ O)	66.0	75.5	72.0	0.67

Pad-test weigh (g)	1.0 ^a	9.0 ^b	3.0	0.03
ICIQ-SF				
Quality of Life	7.5	8.0	10.0	0.23
Total Score	13.0 ^c	16.0 ^d	18.0 ^g	0.00
KHQ				
General Health	50.0	62.5	62.5	0.43
Incontinence Impact	66.6 ^h	66.6 ^m	100.0 ⁱ	0.01
Role Limitation	33.3 ^j	50.0 ⁿ	66.6 ^k	0.00
Physical Limitation	16.6	41.6	66.6	0.07
Social Limitation	0.0(13.0) ^{*e}	27.7 ^f	22.2 ^l	0.01
Personal Limitation	0.0(24.1) [*]	50.0	41.6	0.05
Emotional Problems	22.2	44.4	38.8	0.13
Sleep/Energy/Disturbance	16.6	41.6	50.0 ^l	0.19
Severity Measures	40.0	60.0	53.3	0.16
PISQ-12	31.0	26.0	26.0	0.14

*Kruskall-Wallis **Numbers between parentheses are Mean, since Median didn't identify statistical difference. Post-hoc analysis (U Mann-Whitney): a≠b (p=0.01), c≠d≠g (p=0.00), h≠i (p=0.00), m≠i (p=0.03), j≠k (p=0.00), n≠k (p=0.03), e≠f (p=0.01), e≠l (p=0.00).

Table 2 – Comparison of objective and subjective assessments in women with Mixed Urinary Incontinence according to the amount of urine leakage, answered in ICIQ-SF (n=164).

Variables	Little amount (n=44/49.4%)	Moderate amount (n=26/29.2%)	Severe amount (n=19/21.3%)	p [*]
	Md	Md	Md	
VLPP (cmH₂O)	72.0	66.5	86.5	0.08
Pad-test weigh (g)	1.0	1.0	8.0	0.21
ICIQ-SF				
Quality of Life	9.5	10.0	10.0	0.30
Total Score	14.0 ^a	17.0 ^b	19.0 ^c	0.00
KHQ				
General Health	75.0	62.5	75.0	0.72
Incontinence Impact	66.6 ^d	100.0 ^j	100.0 ^e	0.00
Role Limitation	50.0 ^f	66.6	66.6 ^g	0.02
Physical Limitation	66.6	66.6	66.6	0.98
Social Limitation	22.2	33.3	33.3	0.31
Personal Limitation	16.6	66.6	33.3	0.05
Emotional Problems	44.4 ^h	55.5	88.8 ⁱ	0.01
Sleep/Energy/Disturbance	50.0	58.3	66.6	0.18
Severity Measures	49.8	59.1	60.0	0.07
PISQ-12	29.0	23.5	25.0	0.38

*Kruskall-Wallis ** Numbers between parentheses are Mean, since Median didn't identify statistical difference. Post-hoc analysis (U Mann-Whitney): a≠b≠c (p=0.00), d≠e (p=0.00), j≠e (p=0.02), f≠g (p=0.01), h≠i (p=0.00).

References

1. Liebergall-Wischnitzer, M. et al. Concordance Between One-hour Pad Test and Subjective Assessment of Stress Incontinence. Urology, 2010, Vol.76(6), pp.1364-1368.

Disclosures

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