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HYPOTHESIS / AIMS OF STUDY

Limited literature data are available on the correlation between anxiety levels and uroflowmetry (UF). Aim of this study was to assess the correlation between emotional condition of the patients at UF and whether anxiety/embarrassment may affect patient's micturition.

STUDY DESIGN, MATERIALS AND METHODS

- Prospective multicenter study (July 2018-ongoing)
- Patients enrolled during an office UF
- Data recorded: demographics, urological history and therapies/surgical procedures
- UF & Post-void residual (PVR) urine measured by bladder scan
- Questionnaires:
 - Males: International Prostate Symptoms Score (IPSS)
 - Females: International Continence Index Questionnaire Urinary Female LUTS (ICIQ-FLUTS)
 - General Anxiety Disorder – 7 (GAD-7) scores: <5 no anxiety; 7-10 moderate anxiety; 11-15 severe anxiety
 - Modified Amsterdam Preoperative Anxiety and Information Scale (APAIS) (item #4-6), scores: 3-6 no anxiety; 7-10 moderate anxiety; 11-15 severe anxiety
- Linker-type scale for subjective evaluation of micturion satisfation/reproducibility and the discomfort
- Statistical analysis: one-way ANOVA, Mann-Whitney test

RESULTS

Patients enrolled were 125 (mean age 65+ 13 yrs): 85 men (68%) and 40 women (32%). Voided volumes, Qmax, PVR, and discomforts did not correlate with higher level of anxiety. However, greater anxiety negatively influenced the subjective satisfaction and the UF reproducibility. Patients with higher anxiety levels showed greater symptomatology questionnaires. Table 1 shows results according to GAD scores and APAIS modified scores. A general high level of anxiety was assessed by GAD in 41,6% (52/125) of the cohort, while a high level of UF-related anxiety was recorded by APAIS in 42,4% (53/125). Women reported GAD score >5 in the 87.5% (35/40), and APAIS score >6 in the 70% (28/40). GAD score > 5 and APAIS modified score >6 were documented in males in 44,7% (38/85) and 29% (25/85) respectively. The relation between GAD - APAIS levels and satisfaction/reproducibility and discomforts of the patient are reported in Table 2. A low satisfaction/reproducibility of the exam was reported by 31.2% of the patients (39/125): 38.5% males and 45% females. High discomforts were recorded in 51.2% (74/125) of the population: 56.5% men and 65% women.

Table 1. Results according to the General Anxiety Disorder (GAD) scores and Amsterdam Preoperative Anxiety and Information Scale (APAIS) modified scores.

GAD	GAD <5	GAD 5-9	GAD 10-14	GAD 15-21	P
Number of patients	52	33	34	6	
VV, mean	272.3 ± 137.2	279.8 ± 124.5	274.2 ± 124.7	169.2 ± 88.1	0.27
Qmax, mean	15.2 ± 9.0	16.6 ± 7.5	14.7 ± 5.6	12.9 ± 3.7	0.09
PVR, mean	53.8 ± 47.1	41.8 ± 46.6	45.0 ± 56.2	27.5 ± 30.1	0.44
Sympt. Quest., mean	11.6 ± 6.7	13.3 ± 6.2	20.7 ± 9.3	21.0 ± 8.7	<0.01
Satisfaction, mean [0-100]	69.2 ± 18.5	62.4 ± 19.0	47.1 ± 30.0	60.0 ± 24.5	<0.01
Discomforts, mean [1-5]	2.8 ± 1.3	3.1 ± 1.3	3.4 ± 1.4	3.2 ± 1.2	0.15

APAIS modified	3-6	7-10	11-15	P
Number of patients	72	38	15	
VV, mean	236.3 ± 116.1	283.7 ± 140.0	266.1 ± 164.8	0.7*
Qmax, mean	14.7 ± 7.1	16.0 ± 8.8	16.7 ± 7.2	0.6*
PVR, mean	49.3 ± 48.4	38.6 ± 36.9	57.3 ± 73.6	0.3*
Sympt. Quest., mean	12.4 ± 7.2	16.4 ± 7.4	19.1 ± 11.3	0.02*
Satisfaction, mean [0-100]	61.1 ± 24.1	62.6 ± 23.7	56.0 ± 25.9	0.6*
Discomforts, mean [1-5]	3.1 ± 1.4	2.9 ± 1.4	3.1 ± 1.1	0.7*

Table 2. Relation between the General Anxiety Disorder (GAD) levels and satisfaction/reproducibility and discomforts. Relation between the Amsterdam Preoperative Anxiety and Information Scale (APAIS) modified levels and satisfaction/reproducibility and discomforts

	Low discomforts	High discomforts	Satisfaction <60	Satisfaction ≥ 60
GAD <5	14/51 (27.5%)	38/74 (51.4%)	10/52 (19.2%)	42/52 (80.8%)
GAD ≥5	37/51 (72.5%)	36/74 (48.6%)	29/73 (39.7%)	44/73 (60.3%)

	Low discomforts	High discomforts	Satisfaction <60	Satisfaction ≥ 60
APAIS 3-6	31/72	41/72	26/72	46/72
APAIS 7-10	15/38	23/38	11/38	27/38
APAIS 10-15	5/15	10/15	4/15	11/15

INTERPRETATION OF RESULTS

A high levels of general, and UF-related anxiety was found in 4/10 patients, with a surprisingly severe discrepancy between genders. Women were mostly affected by high general and UF-related high anxiety. The higher levels of anxiety mainly influenced the subjective satisfaction/reproducibility of the UF, while no significant differences were found among the objective outcomes (VV/Qmax/PVR). Patients with higher anxiety levels showed worst results at the symptomatology questionnaires. The emotional condition poorly influenced the UF discomforts.

CONCLUDING MESSAGE

A relevant rate of patients showed high anxiety levels. This study demonstrated that UF, although is a simple and not invasive test, has an important impact on the emotional condition of the patients, mostly in women. Anxiety influenced the subjectivity of the patients leading to the sensation of not having reproduced the normal urinary pattern. Therefore, a proper counseling may lower anxiety levels obtaining more physiological results at UF.

