

COMPARISON OF SELF-REPORTED DAYTIME VOIDING FREQUENCY AND NOCTURIA BETWEEN CONTROLS AND WOMEN REPORTING STRESS, URGE OR MIXED URINARY INCONTINENCE

Hypothesis / aims of study

Urinary incontinence is the main indication of a storage disorder, which also includes increased daytime voiding frequency and nocturia. The aim of this study was to evaluate whether self-reported daytime voiding frequency and nocturia differ between controls and women reporting stress, urge or mixed incontinence.

Study design, materials and methods

By means of a validated questionnaire, data were collected from January 2007 – March 2009, from female patients attending a Gastroenterological or a Urological clinic. During the study period, 293 women with incontinence completed the questionnaire. A control group of 94 female patients without Urological complaints, recruited from the Gastroenterological clinic as well as from the General Internal Medicine and Orthopedic clinic, completed the same questionnaire. The items withheld for this study are: age, daytime voiding frequency, nocturia, urinary incontinence (UI), stress urinary incontinence (SUI) and urge urinary incontinence (UUI). The evaluated parameters have been tested for test-retest reliability (4-week interval) and concurrent validity in a preceding study with good results (Daytime voiding frequency: ICC 0.82, 0.76-0.86; Nocturia: ICC 0.82; 0.77-0.87; UI: κ 0.88, 0.81-0.96; SUI: κ 0.85, 0.71-0.99; UUI: κ 0.70, 0.52-0.89). Statistical analysis was performed by commercially available software. ANOVA was used for comparison of daytime voiding frequencies and of nocturia between groups. Statistical significance was set at $P < 0.05$.

Results

Eighty-five patients of the control group (90%) and 226 patients with incontinence (77%) completed all the questions relevant for this study. Table I shows the selected parameters from the questionnaire of incontinent patients and of the control group.

TABLE I. Parameters from the questionnaire of the control group and of patients with Stress, Urge, and Mixed Urinary Incontinence (MUI)

Parameters	Control	SUI	UUI	MUI
Number of patients	85	111	76	39
Mean age	51 \pm 1.7	55 \pm 1.5	62 \pm 1.8	55 \pm 2.0
Daytime voiding frequency	6.2 \pm 0.3	7.4 \pm 0.3	8.9 \pm 0.5	8.4 \pm 0.5
Nocturia	1.3 \pm 0.1	1.6 \pm 0.1	2.8 \pm 0.2	2.1 \pm 0.2

Data are represented as mean \pm standard error of the mean

The statistical power was post hoc calculated to be 0.99 for both the daytime voiding frequency (f : 0.28; α : 0.05) and nocturia (f : 0.40; α : 0.05). Compared to the control group, a higher daytime voiding frequency was reported by all incontinent groups (MUI: $P < 0.002$; UUI: $P < 0.001$; SUI: $P < 0.006$). Patients with UUI reported a higher daytime voiding frequency compared to patients with SUI ($P < 0.02$). A higher nocturia was reported by patients with UUI ($P < 0.001$) and MUI ($P < 0.04$) compared to the control group. Patients with UUI reported a higher nocturia compared to patients with SUI ($P < 0.001$) and MUI ($P < 0.02$).

Interpretation of results

The results of our study with a validated questionnaire, show that there is an increase in self-reported daytime voiding frequency in women with symptoms of urinary incontinence compared to a control group. Women with symptoms of UUI and MUI also report a higher nocturia than women in the control group. These increases are most pronounced in women with symptoms of UUI. Similar results were found for bladder sensation when comparing between women with urinary incontinence and healthy volunteers, using a sensation-related bladder diary (1). Furthermore, our study shows that patients complaining of UUI have a significantly higher daytime voiding frequency and nocturia than patients with symptoms of SUI.

Concluding message

A validated self-reported questionnaire shows a significant distinction in voiding pattern between patients with urinary incontinence and a control group, as well as between patients with SUI and UUI. The reporting of symptoms is highly reproducible.

References

1. Comparison of sensation-related voiding patterns between continent and incontinent women: a study with a 3-day sensation-related bladder diary (SR-BD). Naoemova I, De Wachter S, Wyndaele JJ. Neurourol Urodyn. 2008;27:511-514

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Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes