

VOIDING AND POSTMICTURITION SYMPTOMS IN WOMEN WITH FUNCTIONAL CONSTIPATION.

Hypothesis / aims of study

Constipation presents itself as persistently difficult, infrequent, or seemingly incomplete defecation. This functional bowel evacuation disorder is highly prevalent, occurring in up to 35% of women in the community depending on definition, sampling and demographic factors (1). Constipation has previously been associated with overactive bladder (2), but to our knowledge no studies have investigated its association with bladder evacuation symptoms. The aim of this study is therefore to investigate whether self-reported voiding and postmicturition symptoms differ in women with or without functional constipation.

Study design, materials and methods

By means of a validated bladder and bowel questionnaire, data were collected from 571 female patients attending the functional pelvic clinic of our hospital, between January 2007 and March 2009.

Following patient profile information was withheld: age, pregnancy, parity and hysterectomy. We withheld the following defecation symptoms: frequency (/week), straining, stool consistency (Bristol Stool Form scale), sensation of incomplete evacuation, sensation of anorectal blockage, the use of manual maneuvers to facilitate defecation, and fecal incontinence (FI). The following voiding and postmicturition symptoms were withheld: hesitancy, straining to void, intermittency, slow stream, dysuria, need to immediately re-void, feeling of incomplete bladder emptying and postmicturition leakage. The urological questions are consistent with the guidelines proposed by the International Continence Society (ICS) in 2005 (3). The gastroenterological questions are consistent with the Rome III diagnostic criteria for functional bowel disorders (1).

Women reporting FI were excluded from the study. Patients reporting 2 or more of the Rome III diagnostic criteria for functional constipation (straining, lumpy or hard stools, sensation of incomplete evacuation, sensation of anorectal blockage, manual maneuvers to facilitate defecation and fewer than 3 defecations per week) were included in the "functional constipation" group (1). The patients replying negatively to at least 5 of the 6 Rome III diagnostic criteria were included in the "no functional constipation" group. Patients with too many missing responses to allow classification in either group were excluded from the study.

Statistical analysis was performed with SPSS V 15 (SPSS Inc., Chicago, IL, USA). Statistical significance was set at $P < 0.05$. An unpaired two-sample student's t-test was used to compare the continuous variables age and parity. Pregnancy and hysterectomy were compared between groups by the Pearson Chi Square test. Multivariate analysis was done with each of the voiding and postmicturition questions as categorical dependent variable. The independent variables age, pregnancy and hysterectomy were entered into the logistic regression analysis together with the patient group covariate (functional constipation). An adjusted Odds Ratio (OR) and a 95% Confidence Interval (CI) were estimated to evaluate the correlations. Statistical power was calculated post-hoc for each dependent variable (α level 0.05).

Results

After exclusion of women reporting FI and of women with too many missing responses to allow classification, 398 patients were included in the study: 248 with functional constipation and 150 without functional constipation. The average of missing responses to the voiding and postmicturition questions was 5.4% (range: 3.2% (postmicturition leakage) to 8.1% (need to immediately re-void)). The questions on intermittency and slow stream were sub-questions and had a lower response rate (183 and 94 responders respectively).

Table I shows the selected parameters from the questionnaire of patients with and without functional constipation.

Table I: Patient profile information and voiding and postmicturition symptoms in female patients with and without functional constipation

Parameter	No functional constipation (n=150)	Functional constipation (n=248)	OR	95% CI	Power
Patient profile					
Age (years)	54.9 ± 16.6	51.1 ± 16.7*			
Pregnancy	85.8% (127)	75.1%* (178)			
Parity (number of children)	2.4 ± 1.1	2.2 ± 1.2			
Hysterectomy	24.0% (36)	34.3%* (85)			
Voiding and postmicturition symptoms					
Hesitancy	18.1% (27)	20.3% (48)	1.539	0.751 - 3.153	0.23
Straining to void	28.9% (41)	40.3% (93)	2.292*	1.272 - 4.130	0.99
Intermittency	20.5% (24)	43.2% (79)	3.721*	1.853 - 7.472	0.98
Slow stream	58.5% (31)	45.7% (43)	0.844	0.339 - 2.101	0.99
Dysuria	18.5% (27)	23.3% (55)	1.435	0.746 - 2.761	0.62
Need to immediately re-void	35.2% (51)	47.8% (109)	2.107*	1.210 - 3.667	0.77

Feeling of incomplete emptying	26.4% (39)	38.1% (90)	1.674	0.945 - 2.967	0.8
Postmicturition leakage	46.5% (66)	56.3% (135)	1.607	0.942 - 2.742	0.8

and parity are presented as mean \pm standard deviation, the other parameters as valid percent and number of positive answers (between brackets).
= Odds Ratio; 95% CI = 95% Confidence Interval
indicates a statistical significance of $P < 0.05$

Interpretation of results

Women with functional constipation were significantly younger, had a lower pregnancy rate and reported more hysterectomies than women without functional constipation ($P=0.03$, $P=0.02$ and $P=0.03$ respectively). No difference in parity was found.

Our study shows that the prevalence of voiding and postmicturition symptoms in women with functional constipation is high. The odds to report straining to void and the need to immediately re-void, corrected for age, pregnancy rate and hysterectomy, were twice as high for women with functional constipation ($P=0.006$ and $P=0.008$). The odds to report intermittency was almost four times as high ($P=0.000$). The odds of the other voiding and postmicturition symptoms, apart from the symptom of slow stream, seem all higher in women with functional constipation.

The post-hoc statistical power of the multivariate analysis was good except for the symptoms hesitancy and dysuria.

Concluding message

A validated self-reported questionnaire shows a significant distinction in voiding and postmicturition symptoms between fecal continent women with and without functional constipation.

References

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