

URINARY FREQUENCY IN WOMEN: ARE THERE MULTIPLE FACTORS AT PLAY?

Hypothesis / aims of study

Urinary frequency is an extremely troublesome symptom for many women and its causation is relatively poorly understood. This study attempts to identify urodynamic indices that may play a role in patient reported frequency severity. In this study, we investigated the relationship between patient reported urinary frequency versus maximum cystometric capacity (MCC), first sensation of bladder filling (FSBF) and detrusor overactivity observed on cystometrogram in women. The relationship between patient reported frequency and nocturia was also investigated.

Study design, materials and methods

We have electronic charts on all patients who have undergone Conventional Urodynamic Studies from 1996-2007 at our institution contained in an urodynamic (UD) data base. Using this data base, MCC, volume at FSBF, detrusor overactivity and patient reported nocturia were cross-referenced with the degree of frequency reported by women. Frequency was divided into normal, 2-3 hrs, 1 hr and <1hr. Mean and standard deviation for MCC, FSBF and nocturia were then determined for each level of frequency. A one-way ANOVA ($p < 0.05$) was applied to determine statistical significance. Bladder overactivity for each group was described as a total number and as a percentage.

Results

There were 2532 consecutive patients identified in the UD database. The number of patients for each frequency group (normal, 2-3 hrs, 1 hr, and <1 hr) were 346, 875, 852, and 459 patients respectively. MCC, volume at FSBF and patient reported nocturia all significantly correlated with increasing severity of patient reported frequency ($p < 0.0001$). In addition, bladder overactivity increased with increasing severity of frequency.

Figure 1: Frequency versus Maximum Cystometric Capacity ($p < 0.0001$)

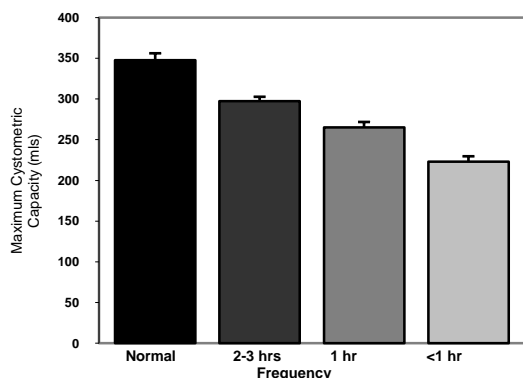


Figure 2: Frequency versus Volume at First Sensation ($p < 0.0001$)

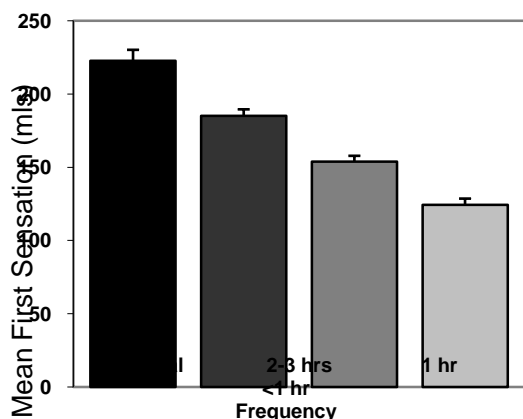


Figure 3: Frequency versus Nocturia ($p < 0.0001$)

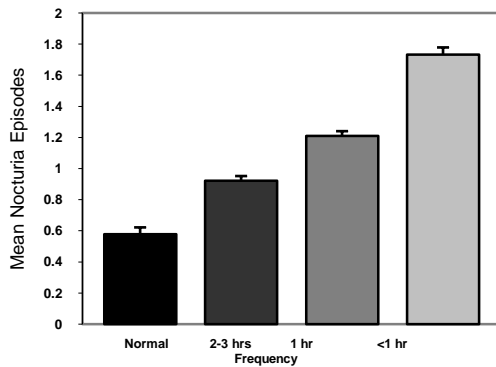
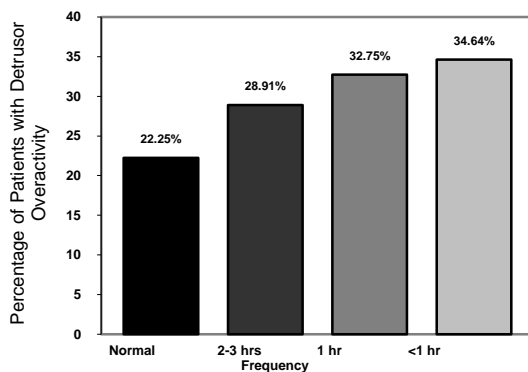


Figure 4: Frequency versus Detrusor Overactivity



Interpretation of results

This is the first large study to demonstrate that multiple factors may play a role in patient reported frequency. Increasing severity of frequency is associated with decreased bladder capacity, earlier first sensation of bladder filling and increased prevalence of detrusor overactivity. Not surprisingly these same factors are likely to play a role at night resulting in increased nocturia in the patient with frequency.

Concluding message

This large study suggests that urinary frequency is likely caused by multiple urodynamic indices. Understanding that multiple variables are involved and interrelated may allow us to more thoroughly treat our patients.

Specify source of funding or grant	None
Is this a clinical trial?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	No