

FREQUENCY-VOLUME CHARTS OF WOMEN WITH GENUINE STRESS URINARY INCONTINENCE AND OF WOMEN WITH GENUINE MOTOR URGE URINARY INCONTINENCE

Aims of study

Frequency-volume charts (FVC's) are widely used to gain objective insight into the voiding pattern of patients. This can be important for diagnostic reasons or for therapeutic evaluation. The aim of this study is to evaluate if the use of just one 24 hour FVC would be sufficient to gain insight into the voiding pattern of women with genuine stress urinary incontinence (SUI) and of women with genuine motor urge urinary incontinence (UUI). Next to that we want to compare voiding parameters of SUI women with those of UUI women.

Methods

Retrospectively, women 18 years old and older with urodynamically confirmed urinary stress incontinence or motor urge urinary incontinence, without neurological disease or other urologic pathological findings were included. They had to complete two or three FVC's correctly during normal daily life.

Voiding parameters (mean voiding volume, frequency during daytime, nocturia, minimum and maximum voiding volume and total voiding volume) and fluid intake were calculated for all 24 hour FVC's.

For each woman we compared parameters calculated from her first 24 hour FVC with the same parameters calculated from all her 24 hour FVC's. Kendall and Gibbons correlation coefficients were calculated for this. Next to that the individual reproducibility was calculated and represented graphically for each parameter. Parameters calculated from all 24 hour FVC's were used to compare characteristics between women with SUI and women with UUI. Mann-Whitney U test was used for statistical analysis.

Results

Fifty-one women with SUI (mean age 57 ± 11 years) and sixty women with UUI (55 ± 16 years) were included for analysis. The calculated voiding parameters agree with those in published reports [1]. There was a strong correlation between all voiding parameters and fluid intake calculated from the first 24 hour FVC's and those calculated from all 24 hour FVC's (coefficients between 0,49 and 0,82: $p < 0,001$ for all parameters). Individual reproducibility was fair for all parameters. For most parameters the difference between data calculated from the first FVC and the same data calculated from all FVC's was in about 80% of the patients smaller than 30%. Some of the main parameters are graphically represented in figure 1.

There were no significant differences in parameters between women with SUI and those with UUI, except for the mean and maximum voided volumes. In table 1 the results of the present study are compared to the results from another published report about women with SUI or UUI [1] and to healthy females [2].

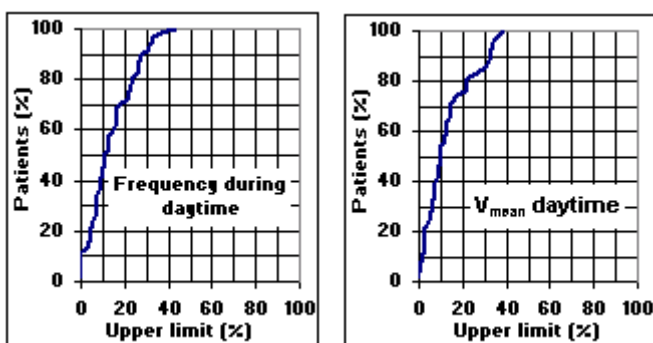


Figure 1: Graphic representations of individual reproducibility showing the cumulative percentage of women with UUI in whom the proportional difference between voiding parameters calculated from the first FVC was equal or lower than the upper limit. To formulate it differently, for a given cumulative percentage of patients, the proportional difference was equal or lower than the percentage on the horizontal axis.

	SUI		UII		Healthy women	P level for present study
	Fink '99 n=73	Present study n=51	Present study n=60	Fink '99 n=23	Larsson '88 n=151	
Frequency during daytime	7,9 ± 2,9	7,8 ± 3,5	8,8 ± 3,7	8,3 ± 2,3	Freq. per 24 h	0,14
Nocturia	1,0 ± 1,0	1,5 ± 0,8	1,7 ± 1,2	1,8 ± 1,6	5,8 ± 1,4	0,18
Void mean per 24 h (ml)	220 ± 84	219 ± 85	181 ± 55	151 ± 58	250 ± 79	0,006
Void maximum per 24 h (ml)	411 ± 138	494 ± 185	385 ± 132	287 ± 96	460 ± 174	<0,001
Age (years)	57,0 ± 12,1	56,8 ± 11,0	54,5 ± 15,5	58,3 ± 19,2	43 (range: 19-81)	0,370

Conclusions

Except for a woman with irregular complaints, the use of only one 24 hour FVC during normal daily life is sufficient to gain insight into the voiding pattern of a woman with genuine stress urinary incontinence or a woman with genuine motor urge urinary incontinence.

There is a large similarity in voiding parameters at a group level between women with SUI and UII, although the nature of these types of incontinence is very different. Significant differences were found for the mean and maximum voided volume, although there was a large overlap. This limits the use for 24 hour FVC's as a differential diagnostic instrument at an individual level.

References

1. Fink D, Perucchini D, Schaer GN and Haller U: the role of the frequency-volume chart in the differential diagnostic of female urinary incontinence. Acta Obstet Gynecol Scan 78: 254-257, 1999
2. Larsson G and Victor A: Micturition patterns in a healthy female population, studied with a frequency/ volume chart. Scand J Urol Nephrol Suppl. 114: 53-57, 1988