

VOIDING INTERVALS AND WARNING TIMES - ARE THEY A REPRODUCIBLE MARKER?

Hypothesis / aims of study

The overactive bladder is a common chronic debilitating condition characterised by increased urinary urgency and frequency with or without urge incontinence. It affects both men and women and has marked effects on quality of life (1). Urgency is a central feature of the overactive bladder, however, though commonly reported, it is difficult to measure and quantify. Evaluation of drug therapies, which aim to relieve this symptom often do not report objective changes in warning time (the time from first sensation of urgency to voiding- the urgency –void interval), but more often show a reduction in absolute number of episodes of urgency. Warning time is a valuable end point of drug therapy and though antimuscarinics show a prolongation of warning time it shows wide variation indicative of the inherent difficulty in measuring this parameter (2). Cystometry may also be used for objective quantification of bladder function, though this shows an inherent variation and this makes interpretation of warning times more difficult (3). For voiding intervals and warning times to be valuable end points of drug therapy they should be reproducible parameters and easily measurable. The aims of our study were to assess if voiding intervals and warning times are a reproducible measure.

Study design, materials and methods

Women were recruited with a urodynamic diagnosis of idiopathic detrusor overactivity who reported frequency at least seven times per day, one or more episodes of urge incontinence per week, and at least seven episodes of urgency per week. Ambulatory urodynamic monitoring was performed for 4 hours, using a standardised protocol with a fluid intake of 180mls every 30 minutes. The urgency and voiding parameters were: the first desire-void interval, warning time and voiding interval. The statistical analysis was performed using the SPSS statistical package version 12.0 for Windows (SPSS Inc., Chicago, Illinois, USA). The reproducibility of the parameters was assessed using the mean 'coefficient of variation' as a measure of consistency between repeated measures of the individual parameters in each patient. A coefficient of variation lower than 10% would indicate a highly reproducible measure.

Results

Seventy-seven women were recruited. The mean number of voids was 5 (Range: 1-11) and urgency episodes was 9 (Range: 0-31). The reproducibility of the parameters was assessed using the mean 'coefficient of variation' of the 77 patients for each parameter (Table One).

Table One- Reproducibility of voiding and urgency parameters

	First Desire-Void Interval	Warning time	Voiding Interval
Overall Mean	1431 secs (SD = 757)	271 secs (SD = 168)	3818 secs (SD = 1247)
Coefficient of Variation	75.40%	47.80%	34.12%
95% Confidence Intervals	+/- 228.85	+/- 63.60	+/- 332.74

SD = standard deviation

Interpretation of results

The coefficient of variation for each of the parameters tested was much greater than 20%, indicative of their poor reproducibility, with 'first desire-void interval' having the poorest reproducibility of all.

Concluding message

This study has shown that 'first desire to void interval', 'warning time', 'voiding interval' have high variability and therefore though clinically valuable end points of drug therapy need to be analysed with care due to high variation in the data.

References

1. Urology 1997; 50: 6A:18-22.
2. Neurourol Urodyn 2003; 22:5.468-469.
3. Eur Urol 2000; 38:681-5.