

COMPUTERIZED AMBULATORY FLOWMETER AND VOIDING DIARY: DESCRIPTION OF THE DEVICE AND EARLY VALIDATION RESULTS

Hypothesis / aims of study

Voiding diaries for the measurement of micturition volume and frequency, and flowmetry quantifying urine flow rate are standard diagnostic tools in urology. We report the initial assessment and validation of a new, portable uroflowmeter/voiding diary (PUF-VD) that we conceived and designed.

Study design, materials and methods

Four members of our Department urinated into the PUF-VD at home as many times as possible for a week. Immediately after each void, they also had to pour urine from the device into a graduated plastic container and record the time of micturition and volume on a paper sheet. Before entering the study, all participants completed an International Prostate Symptom Score to assess their possible voiding dysfunction. They also performed 2 flowmetry measurements with our departmental flowmeter, one before and the other after the home recordings.

Results

Evaluators found the new device easier to use and preferred it to a paper container system if they had to redo the test. Recorded date, time and volume of each micturition were precise when compared to the paper container system. A non-clinically significant average variation of 4% (0-10%) was found in automatically recorded voided volumes. Flowmetries with fixed devices gave values always in the ranges of those measured with the new device. However, variations of peak flow rates up to 20% were recorded with the PUF-VD in the same individual, demonstrating the higher accuracy of repeated measures.

Interpretation of results

This is a new device could be extremely useful in clinical practice, mainly in elderly who may have difficulties to fill properly paper VD. Furthermore it looks to be an accurate instrument for repeated flowmetries, increasing the sensibility and the accuracy of this useful screening test in urology.

Concluding message

This initial evaluation allowed us to display the device's accuracy and utility. A larger scale satisfaction survey of patients and physicians is required.

Specify source of funding or grant	Department of Urology, Jewish General Hospital
Is this a clinical trial?	No
What were the subjects in the study?	NONE