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Title: TIMED MICTURITION AND MAXIMUM URINARY FLOW RATE IN A NORMAL MALE POPULATION.

Aims of Study:

Timed micturition is a simple flow measurement performed by the patient at home, he measures how many seconds it takes to void the first 100 mL. The measurement is repeated 8-12 times. Timed micturition has been used extensively in Sweden when office uroflowmetry fails and the method has been found to be practically useful. Timed micturition is not very well validated and this study was performed to assess normal ranges for different age groups and to study the relation between timed micturition and voided volume. For comparison maximum urinary flow rate was also registered.

Methods:

256 men (range 26-76yy) were selected at random from the National Register and asked to participate in the study. 202 answered the appeal and of those 76 accepted the invitation. After further exclusion because of practical reasons (e.g. extensive travelling, moving to another area) and the presence of LUTS 59 persons remained. One of those failed to register any acceptable voidings. The remaining 58 men (median 58 yy, mean 54 yy, range 30-75 yy) contributed with voidings made at home measured with a portable Da Capo™ uroflowmeter. Both TM and Qmax were calculated from the same voiding.

Results:

A total of 1287 acceptable voidings with a voided volume >100 mL from 58 men (median 21, mean 22, range 7-43 voidings) were performed. The men were divided into four age groups but there was only a difference in TM between those older and younger than 55 years. Percentiles for TM are shown in the table.

Percentiles (s)	2.5	5	10	25	50	75	90	95	97.5
< 55 years	4	4	4	4.5	5.5	6.5	7.5	8.5	10
≥ 55 years	4.5	5	5.5	6.5	8	9.5	12	15	17

In the age group <55 yy (median 40 yy), timed micturition was not dependent on voided volume. In the group ≥55 yy (median 64 yy) there was a slight decrease in timed micturition with increasing voided volumes. Maximum flow rate changed more than TM with increasing voided volumes. Since TM did not vary much with voided volume it was not necessary to construct nomograms. The intraindividual variation of TM and Qmax was greater than expected i.e. the same person could void with great variation of TM and Qmax at the same voided volume.

Conclusion:

In this study, we present normal ranges for TM based on voidings made from randomly selected men without voiding symptoms. TM has been shown to be a simple and reliable method to measure urinary flow rate with less dependency on voided volume than maximum urinary flow rate. Provided the voided volume is sufficient to estimate TM it is not necessary to correct for voided volume.