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STANDARDIZED URETHRAL PRESSURE PROFILOMETRY IN WOMEN: REPRODUCIBILITY OF MAXIMUM URETHRAL CLOSURE PRESSURE.

Hypothesis / aims of study

Controversies about the role of urethral pressure profilometry in clinical practice are mainly based on doubt about the reproducibility of the measurements.

The aim of this retrospective study was to determine the reproducibility of same session repeated urethral pressure profile (UPP) measurements in women with lower urinary tract symptoms using the most common parameter, the maximum urethral closure pressure (MUCP).

Study design, materials and methods

Population:

The population comprised of 123 consecutive women without neurological disease (mean age 58.5±14.8y [21-90y]) referred for evaluation of lower urinary tract dysfunction and was stratified in four groups: continent, stress incontinence, urge incontinence, mixed incontinence.

Complete (standardized) urodynamic session:

A session included the following tests: free uroflowmetry, UPP bladder empty (**0**) (supine position) before filling cystometry and pressure flow study (seating), UPP bladder filled at 250 mL with saline at room temperature; 7F triple lumen water perfusion catheter, puller speed of 1 mm/s.

Sequence of tests in supine position during urethral testing: (**1**) UPP at rest, (**2**) Kegel manoeuvre at MUCP, (**3**) UPP with 3 to 5 successive coughs (transmission test), (**4**) VLPP, (**5**) UPP before 10 successive strong coughs and (**5'**)after (fatigability test), then (**6**)UPP was recorded in standing position.

Recordings:

All MUCP values were reviewed independently by 2 investigators.

Comparisons:

In each group MUCP value (**1**) was compared with (0), (3), (5), (5') and (6).

Results

No significant difference in age and in percentage of menopausal (except urge vs. stress group: p =0.026) between the 4 groups; previous pelvic surgery was more frequent in the groups with urge or mixed incontinence (table 1).

group	Continent	Stress	Urge	Mixed
age	58 ± 12	55 ± 14	62 ± 12	59 ± 17
% menopausal	75	65	**88**	71
% previous pelvic surgery	33	44	61	55

MUCP values (in cm H_2O) are reported in table 2 (Wilcoxon *p<0.05, **p< 0.001):

group	bladder	Continent	Stress	Urge	Mixed
No women		12	34	33	44
0	empty	**68.6±30.1**	54.5±20.6*	58.7±21.5**	52.3±24.0**
1	**filled**	**65.2±31.7**	**46.4±21.1**	**45.5±22.8**	**46.5±25.2**
3	filled	46.3±17.0*	39.5±21.1**	41.9±21.2*	40.1±24.8**
5	**filled**	**53.8±16.1**	**43.1±23.9**	**47.7±19.1**	**44.7±22.8**
5'	filled	**50.9±21.5**	36.4±22.6*	**45.7±22.5**	36.9±19.7**
6 (standing)	filled	**64.4±40.3**	38.1±20.1*	**44.0±21.8**	40.4±24.8*

In all groups, no significant difference bladder filled between MUCP values at rest (**1**), and before coughs of fatigability test (**5**).

In the continent group, only a significant difference between MUCP bladder filled (**1**) and during coughs of transmission test (**3**).

In the 3 incontinent groups, at rest, MUCP bladder empty (**0**) was higher than MUCP bladder filled (**1**); MUCP decreased in standing position (**6**) in women with stress or mixed incontinence.

MUCP tended to be lower in women with incontinence whatever the type of incontinence and the test.

Interpretation of results

MUCP is a specific aspect of UPP. Main criticisms are that it is not an absolute measure of the urethral pressure, that it is an evaluation of the sphincter at rest, that it does not provide information on bladder neck or proximal urethra, that it can be variable as the result of involuntary muscular contractions (irritant effect of the catheter), and that the pressure varies with size and type of catheter, rate of perfusion, bladder volume and patient position.

In our urodynamic laboratory, we have standardized the protocol of UPP recording. In this way, we rub out many causes of reproducibility defect.

The main result is the reproducibility of MUCP at rest during the whole UPP session whatever the diagnosis. In addition, we are able to bring to the fore some characteristics of each type of incontinence.

Concluding message

good reproducibility. Changes in MUCP value are clearly related with the type of incontinence. Although not a decisive argument for diagnosis, MUCP can help the urodynamicist in his diagnostic approach.

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Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require ethics committee approval because	**It involved retrospective analysis of urodynamic studies from a database.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**