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BLADDER CAPACITY ASSESSMENT IN WOMEN WITH IDIOPATHIC OVERACTIVE BLADDER

Hypothesis / aims of study

Bladder capacity (BC) measured with filling cystometry in women with idiopathic overactive bladder (OAB) is decreased. BC can be also evaluated by bladder diaries or Uroflowmetry, but their use is controversial.

The concordance is the degree that matches two or more measurements in the same sample.

The aim of this study was to assess the degree of concordance of the different forms of measuring bladder capacity with the 3 Day(s) Bladder Diary (3DBD), Uroflowmetry and conventional Urodynamic Studies (UDS).

Study design, materials and methods

An epidemiological, multicentre, cross-sectional study was carried-out in Spain. Women with clinical diagnosis of idiopathic overactive bladder (IOAB) who fulfilled all the selection criterion and were referred to any of the 55 participating Functional Urology and Urodynamic Units were recruited. The variables analysed in the 3DBD were maximum voided volume (VVmax) and average voided volume (VVavg); maximum cystometric capacity (CCmax) through the filling cystometry, and voided volume (VV) by means of Uroflowmetry. BC was classified as: reduced<350 ml; normal 350-650 ml; increased>650 ml. We calculated the intraclass coefficient of correlation (ICC) (quantitative variable) and weighted Kappa index (categorical variable). The interpretation of the ICC is similar to that of the weighted Kappa index: <0.4 "poor"; 0.4-0.75 "acceptable" and >0.75 "excellent".

Results

Data from 247 women were included. Mean (SD) age was 57.66 (13.43) years old. 19.43% of them had undergone a hysterectomy, 11.34% stress urinary incontinence surgery and 4.45% pelvic organ prolapse surgery. The results are displayed in Tables 1 and 2.

Table 1. Descriptive analysis of bladder capacity

	3DBD		FILLING CYSTOMETRY	UROFLOWMETRY
Bladder capacity measure (normal values ml)	VVmax (350-650 ml)	VVavg (170-325 ml)	CCmax (350-650 ml)	VV (350-650 ml)
N	233	231	240	235
Mean	452.8	167.7	275.7	216.4
Median	350	162.2	262.5	190
Standard Deviation	358.8	57.9	143.3	142.1
p25	250	127.9	169.5	108
p75	490	198.6	349	280

Table 2. Concordance among 3DBD, UDS and Uroflowmetry for the measurement of BC

	Quantitative	Qualitative
	ICC (95%CI)	Weighted Kappa Index (95%CI)
CCmax-VV	0.393(0.173-0.613)	0.181(0.133-0.299)
VVmax-VV	0.011(0.093-0.126)	0.000(0-0.118)
CCmax-VVmax	0.082(0.023- 0.198)	0.033(0-0.157)
*<0.4 ICC and Kappa indicates poor agreement in all comparisons		

Interpretation of results

A single determination <350 ml of maximum BC measured with any of the tools is not sufficient to diagnose a reduction. Only the 3DBD provides multiple measurements of maximum BC in truly physiological conditions. There is “poor” agreement between the methods of assessment of maximum BC (3DBD, UDS and Uroflowmetry).

Concluding message

1. There is “poor” agreement between the methods of assessment of maximum BC (3DBD, UDS and Uroflowmetry).
2. VVavg is reduced in women with IOAB.
5. Maximum BC measured with 3DBD (VVmax) is not decreased.

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<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Ethics Committee of Hospital Ramón y Cajal, Madrid, Spain
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes