

BLADDER VOIDING EFFICIENCY (BVE) IN WOMEN.

IS IT REPRODUCIBLE BETWEEN SUCCESSIVE FREE AND INTUBATED FLOW? IS IT A GOOD INDICATOR FOR URODYNAMIC DIAGNOSIS IN WOMEN? #359

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Hypothesis / aims of study

Bladder voiding efficiency (Void%) is measured according to the degree of bladder emptying and defined as the ratio between voided volume and total bladder capacity [1]. This simple index, easy to calculate, is not widely used; more, evaluation from free flow (FF) has not been reported.

Aims of the study were **first** to evaluate the reproducibility of BVE between FF and intubated flow (IF) and **second** to search for a relationship between BVE and urodynamic diagnosis (UD) in women

Study design, materials and methods

Urodynamic tracings of non-neurological women referred for investigation of various LUTS were analyzed.

Urodynamic study included one FF at arrival in private condition, one cystometry (filling rate 50 mL/min, triple lumen urethral catheter 7F allowing for urethral pressure recording).

Post void residual volume (PVR) was measured using a Bladder-scan.

Exclusion criteria were voided volume <100 mL and prolapse of grade > 2.

Results (1)

Of 226 urodynamic studies, 143 women met study criteria.

Mean age was 59.0 ± 14.4 years (range [21-90]).

Presenting complaint was: SUI (28), UI (37), MUI (45), frequency (16), dysuria (7) and other (urinary tract infection, interstitial cystitis, pain (11)).

Overall BVE IF (79.8 ± 28.6) was significantly lower than BVE FF (90.7 ± 15.9) ($p < .0001$).

Results (2)

Following urodynamic study, urodynamic diagnosis (UD) was posed according to the ICS/IUGA recommendations and **2 sub-groups defined according with involvement of detrusor**. The first (78 women) had **UD related to detrusor dysfunction** (bladder outlet obstruction (BOO), detrusor hyperactivity with impaired contractility (DHIC), detrusor overactivity (DO), detrusor underactivity (DU)). The second (65 women) had **UD found "normal" (N), related to urethral dysfunction** (intrinsic sphincter deficiency (ISD)) or showing **voiding triggered by urethral relaxation** (URA). Comparison of BVE values is given in the table. **There was no significant difference in BVE FF between the 2 sub-groups while BVE IF differed significantly ($p = .0001$).**

UD	Nbr	Age	BVE IF	BVE FF	p
Detrusor dysfunc	78	62 ± 14	71.5 ± 31.3	90.9 ± 16.2	<.0001
Normal or Urethra	65	56 ± 14	89.5 ± 21.5	90.6 ± 15.8	n.s.

The only evaluation of BVE from FF must be regarded with caution as there is no correlation between BVE IF and BVE FF except in absence of detrusor disturbance. Lower urinary tract dysfunction involving a disturbance of the detrusor (BOO, DHIC, DO and DU) leads to a significant decreased BVE during IF. UD diagnosis N or related to a dysfunction of sphincter or urethral behavior is not accompanied by a decreased BVE during IF.

Conclusion

BVE index is a relatively simple index to measure.

In this large cohort of non-neurogenic women studied urodynamically for a variety of LUTS, **there is no correlation between BVE measured from a FF and BVE obtained during an IF. But, for a given patient, when a difference in BVE is observed between FF and IF, there seems that BVE is a good indicator of voiding dysfunction related to detrusor disturbance.**

Reference

1- Abrams P. Bladder outlet obstruction index, bladder contractility index and bladder voiding efficiency: three simple indices to define bladder voiding function. BJU Int 1999; 84:14-15.