

17

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Title: Short-term reproducibility of cystometry and pressure-flow micturition studies in healthy women

Aims of study:

Routine urodynamic investigation in women with lower urinary tract symptoms has a large impact on clinical decision-making. We wanted to explore any clinically relevant effect of repeated, same-session (duplicate) cystometry.

Methods:

Thirty healthy women with a mean age of 52.1 years were investigated with duplicate medium-fill water cystometry with pressure-flow micturition studies. Bland-Altman plots were used to compare repeated measurements.

Results:

A large test-retest variability was noted, with wide limits of agreement. Of statistical significance (*, $p < 0.05$) was an increase of first desire and normal desire, and a decrease in bladder opening pressure. Maximum cystometric capacity was unchanged.

| | Mean of differences of the two measurements (bias) | 95% confidence interval | t-test (P) | limits of agreement |
|---|--|-------------------------|------------|---------------------|
| First desire (ml) | 33.7 | 5.8 - 61.5 | 0.01 * | -104.4 - 171.7 |
| Normal desire (ml) | 51.4 | 16.0 - 86.2 | 0.006 * | -123.8 - 226.7 |
| Cystometric capacity (ml) | -1.8 | -28.0 - 24.3 | 0.89 | -131.4 - 127.7 |
| Voided volume (ml) | -11.4 | -48.1 - 25.2 | 0.53 | -189.0 - 166.1 |
| Q _{max} (ml/s) | 1.6 | -0.7 - 3.8 | 0.16 | -9.2 - 12.3 |
| Q _{average} (ml/s) | 0.1 | -1.2 - 1.3 | 0.91 | -5.9 - 6.0 |
| T _Q , flowtime (s) | -5.0 | -11.7 - 1.7 | 0.13 | -37.5 - 27.5 |
| P _{det(open)} (cmH ₂ O) | -2.6 | -5.7 - 0.5 | 0.09 | -16.3 - 11.1 |
| P _{det(Qmax)} (cmH ₂ O) | -2.3 | -5.6 - 1.0 | 0.15 | -14.6 - 10.0 |
| P _{det(max)} (cmH ₂ O) | -8 | -5.2 - 21.2 | 0.22 | -41.5 - 57.5 |
| P _{ves(open)} (cmH ₂ O) | -6.0 | -10.9 - 1.0 | 0.02 * | -27.7 - 15.8 |
| P _{ves(Qmax)} (cmH ₂ O) | 0.5 | -4.9 - 5.9 | 0.85 | -19.7 - 20.7 |

Conclusions:

The nature of the conditioning effect of the 1st fill remains to be explored. Maybe the phenomenon could be utilized for improved urodynamic diagnosis.

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