

## COMPARISON OF URINARY FLOW PARAMETERS MEASURED DURING FREE UROFLOWMETRY AND PRESSURE FLOW TEST

### Hypothesis / aims of study

The pressure-flow study is considered to be superior to free uroflowmetry, because of its complex evaluation of parameters, despite it being more invasive. This study aims to compare urinary flow rate parameters obtained at free uroflowmetry and pressure-flow test (PF) in order to assess the reliability of uroflowmetry alone as a screening or diagnostic test.

### Study design, materials and methods

We retrospectively analyzed 100 consecutive urodynamic tests in which both free uroflowmetry and PF study were available. The series included 67 women (23-71 years old) and 33 men (19-57 years old) who were investigated for LUTS. 43 patients (21 men and 22 women) were referred with neurogenic bladder. Both tests were performed using the Medtronic Duet Logic urodynamic device and 8Fr urethral catheter with two or three lumina and with the patient in supine position for PF. The tests were performed according to the ICS guidelines for good urodynamic practice. We compared the flow parameters (maximum flow rate, time to maximum flow and voided volume) obtained after each test in the same individual. Data was analyzed separately for men, women and neurogenic bladders.

### Results

In the males group, Q<sub>max</sub> on free flowmetry had values between 9ml/sec and 41 ml/sec, while on PF values ranged from 7ml/sec to 24ml/sec. Intra-individual variation ranges from 9% to 55%. Time to maximum flow was always longer at PF, with variation between 15% and 50%. In the female group, Q<sub>max</sub> after free flow ranged between 12ml/sec to 31ml/sec, and after PF was between 9ml/sec and 29ml/sec. Time to maximum flow had a similar profile as in males. In the neurogenic group, Q<sub>max</sub> at free flow had values between 5ml/sec to 24ml/sec, and from 3ml/sec to 25ml/sec after PF. Time to maximum flow had either increased or decreased at PF compared to free flow. Voided volume data could not be compared on the whole series.

### Interpretation of results

### Concluding message

Urinary flow rate alone is known to be variable in the same individual, and when invasive urodynamics is performed, the variance increases further. Free uroflowmetry seems to be more accurate in describing the actual flow rate, while the PF study is useful for differentiation between obstruction and underactive detrusor.

### Disclosures

**Funding:** none **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** we performed the standard urodynamics technique, then compared the data. **Helsinki:** Yes **Informed Consent:** No