

## INSULIN DEPENDENT DIABETES MELLITUS AND ITS IMPACT ON THE LOWER URINARY TRACT: A VIDEOURODYNAMICAL ANALYSES

### Hypothesis / aims of study

The consequences of diabetic neuropathy for the lower urinary tract are known to show a variety of possible storage and voiding dysfunctions. New insights in pathogenesis and clinical research are underlining the importance of evaluating these dysfunctions. Patients suffering of diabetes mellitus are developing clinically relevant symptoms in app. 30% due to diabetic neuropathy. This process can affect the somatic (app. 66%) and the autonomic neural system (app. 33%). With respect to the autonomic system, lower urinary tract symptoms (LUTS) are widely described in up to 80%. However based on the different locations of the diabetic neuropathy, there is no exact forecasting how the bladder will get affected by it. By urodynamical and videourodynamical assessments these uncertainties can be exactly differentiated resulting in a proper therapeutic regime.

The aim of this study was to evaluate the epidemiology of patients with LUTS and insulin-dependent diabetes (IDDM).

### Study design, materials and methods

We retrospectively analyzed all videourodynamical examination of 3850 patients in our centre in the time period from 07/2001 till 12/2012. All examinations were performed in a standardized manner according to the ICS guidelines. These following parameters were analyzed: Age of patient at presentation, main diagnosis, fluoroscopic morphology of the lower urinary tract, maximum cystometric capacity (ml), maximum voided volume (ml), micturition time (s), stream rate (ml/s), post void residual (ml), detrusor pressure at maximum flow (cmH<sub>2</sub>O), IPSS, LQI.

We included all patients with IDDM for at least one year.

Other relevant neurological comorbidities influencing the storage and voiding phase were ruled out by a parallel interdisciplinary examination by a neurologist.

Besides the above mentioned diagnostics, all patients received a complete urological check before which consist of bladder diary, sonography of the upper and lower urinary tract as well as laboratory examinations.

### Results

From 3850 patients in total we evaluated 401 (170 women, 231 men, mean age: 67.7 years) which had the confirmed diagnoses of IDDM. Of these 401 patients we selected another 129 (39 women, 90 men) with no organic cause for their symptoms based on our diagnostic approach.

Eight different videourodynamical findings were identified.

51.1% of men showed a combined storage and voiding dysfunction of at least two urodynamically relevant entities.

38.5% of women showed a combined storage and voiding dysfunction of at least two urodynamically relevant entities.

### Interpretation of results:

Diabetic neuropathy can result in a variety of different storage and voiding dysfunction of the lower urinary tract. Beside the almost identical symptom complex treatment regimes are distinguishing in these cases.

The high percent rate of combined dysfunction even elevates the difficulty to offer a proper therapy.

This study underlines the necessity of a proper diagnostic approach in patients with IDDM.

### Concluding message

IDDM results in complicated storage and voiding dysfunctions. A proper diagnostic approach including urodynamical or videourodynamical assessments is essential and should get recommended.

### Disclosures

**Funding:** None **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics not Req'd:** it was a retrospective analyses of clinical diagnostic examinations. **Helsinki:** Yes **Informed Consent:** Yes