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VESICO-URETERAL REFLUX IN A CONTEMPORARY SERIES OF SPINAL CORD INJURY PATIENTS WITH LOWER URINARY TRACT DYSFUNCTION

Hypothesis / aims of study
Historically, vesico-ureteral reflux (VUR) was one of the main causes for renal failure and reduced life expectancy in patients with neurogenic lower urinary tract dysfunction (NLUTS) due to spinal cord injury (SCI). VUR is mostly caused by high intravesical pressure secondary to neurogenic detrusor overactivity (NDO) of low bladder compliance and is less commonly an abnormality of the vesico-ureteral junction. Thus, the therapeutic concept is to decrease the intravesical pressure creating a low-pressure urinary tract.

Study design, materials and methods
In a prospective observational study, 120 SCI patients with NLUTD (29 women, 91 men) undergoing urodynamic evaluation between January and August 2010 were evaluated. Primary outcome was incidence and degree of VUR. Secondary outcomes were SCI level, duration of disease, urodynamic parameters, and current therapy.

Results
Median age of the 120 patients was 47 years (range 13-87). 96 patients had upper motor neuron, 9 lower motor neuron, and 15 cauda lesion. VUR occurred in 12 patients (10%), 11 with upper motor neuron and 1 with cauda lesion. VUR was usually low grade (grade 1 or 2) with a mean maximum detrusor pressure of 44 cm H_2O (range 24-85), the compliance was normal (55 mL/cmH_2O). Most patients with VUR reflux relied on intermittent self catherization (6/12), (4/12) had an indwelling transurethral catheter and (2/12) a suprapubic catheter. Renal ultrasound revealed grade 1 dilatation in two cases and parenchymal alteration in one patient. Mean serum creatinine was within the normal range 63 µmol/L (range 26-112). Of the 12 patients with VUR, six were on antimuscarinics and six were untreated at the time of investigation. Due to NDO, six of these patients consequently underwent intradetrusor botulinum toxin A injections. Six weeks later, VUR was cured in five patients and decreased from grade 3 to grade 1 in one patient.

Interpretation of results: Regular long-term follow-up with annually urodynamic investigations seems to be an appropriate method to prevent secondary complications in patients with NLUTD due to spinal cord injury. In addition, individually applied therapies decreasing high intravesical pressure are auxiliary to reduce VUR.

Concluding message: In our contemporary series of SCI patients with NLUTD, the incidence and degree was low and secondary complications of the upper urinary tract could be prevented so that regular evaluations guiding adequate treatment are warranted.

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Ethical approval:

This study was approved by the local ethics committee (Kantonale Ethikkommission Zürich)

Disclosures and funding

Dr. Kessler has acted as consultant for Medtronic and Allergan.

Specify source of funding or grant	**No funding**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Kantonale Ethikkommission Zürich, Switzerland**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**